

FEDERAL BUREAU OF INVESTIGATION  
FOI/PA  
DELETED PAGE INFORMATION SHEET  
FOI/PA# 1218644-0

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**Filing and Security**Primary Case: 321D-IR-A7788Case Title: (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT

Serial Number: 18

Serialized: 03/26/2009

Initiated: 07/02/2012

ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED

DATE 12-31-2013 BY NSICG F54M93K42

**Details**

Serial #: 18

Type: EC

Document Title: UAS DEMONSTRATIONS AT QUANTICO, 03/05/2009.

Approval Date: 03/26/2009

Classification: SN

**Contents:**

Precedence: ROUTINE Date: 03/26/2009

To: CIRG Attn: FFOU

From: CIRG

ASTOS/FFOU

Contact: SSA [REDACTED]

b6  
b7C

Approved By [REDACTED]

Drafted By: [REDACTED]

Case ID #: 321D-IR-A7788 (Pending)

Title: UNMANNED AERIAL SYSTEMS ("UAS");  
FIELD FLIGHT OPERATIONS UNIT;  
BUREAU AIRCRAFT OPERATIONS

Synopsis: UAS Demonstrations at Quantico, [REDACTED]

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Details: On 03/05/2009, SSA [REDACTED] attended a UAS demonstration at Marine Corps Base Quantico. The demonstration was hosted by Technical Response Unit ("TRU") for the benefit of the Federal Aviation Administration ("FAA") and industry stakeholders such as the Airline Pilots Association.

The largest and most capable system demonstrated was

b3  
b7E

Also demonstrated were smaller UASs such as [REDACTED]

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[redacted]

During the demonstrations, the investigating Agent  
discussed the future of Bureau UASs with Unit Chief [redacted]  
[redacted] and Program Manager [redacted]

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Routing

Drafted by: [redacted]

Approved by: [redacted]

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**Filing and Security**Primary Case: 321D-IR-A7788Case Title: (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT

Serial Number: 21

Serialized: 04/29/2009

ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED

Initiated: 07/02/2012

DATE 12-31-2013 BY NSICG F54M93K42

**Details**

Serial #: 21

Type: EC

Document Title: GROUND PORTION OF 14 CFR \* 61.56 FLIGHT REVIEW

Approval Date: 04/29/2009

Classification: SN

**Contents:**

Precedence: ROUTINE Date: 04/29/2009

To: Operational Technology Attn: TPS/TRU  
UC [REDACTED]  
SSA [REDACTED]  
ET [REDACTED]  
CIRG Attn: SSA [REDACTED]  
MAPA [REDACTED]b6  
b7C

From: CIRG

ASTOS/FFOU

Contact: SSA [REDACTED]

Approved By: [REDACTED]

Drafted By: [REDACTED]

Case ID #: 321D-IR-A7788 (Pending)  
321D-IR-A8463 (Pending)  
321D-IR-A8373 (Pending)Title: UNMANNED AERIAL SYSTEMS ("UAS");  
FIELD FLIGHT OPERATIONS UNIT;  
BUREAU AIRCRAFT OPERATIONSSynopsis: Ground portion of 14 CFR \* 61.56 flight review  
completed for UAS Pilots.Details: On [REDACTED] SSA [REDACTED] and ET [REDACTED]  
attended ground training at Aviation Surveillance Branch.  
This training was conducted as part of ASB's ongoing effort to  
integrate unmanned aerial systems ("UAS") into the FBI's  
surveillance program. To ensure the highest practical levels  
of safety, SSA [REDACTED] will be trained as an FBI Special Agent  
Copilot (Single Engine) and ET [REDACTED] will receive  
Intelligence Specialist Aviation ("ISA") training. Both  
individuals operate [REDACTED] UASS.b6  
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b7EInstructor Pilot SSA [REDACTED] provided [REDACTED]  
[REDACTED] of ground instruction in fulfillment of the 14 CFR \*  
61.56 requirement for a review of the general operating and  
flight rules of 14 CFR \* 91. The flight portion and copilot  
flight evaluation for SSA [REDACTED] will be scheduled.  
The PowerPoint presentation

used during the training has been posted to the Aviation Support Unit intranet site at [redacted]

b7E

In addition to the training provided by SSA [redacted] ISA [redacted] lectured on the Bureau's forward looking infrared program. Also, SSA [redacted] discussed the Bureau's Aviation Safety Program. With the entire day devoted to the study of Aviation regulations, policies, and safety topics, this meeting should be recorded as a required quarterly safety meeting for SSA [redacted] SSA [redacted] and ET [redacted]

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On 04/29/2009, SSI [redacted] entered Technical Response Unit's unmanned aerial systems into Professional Flight Management ("PFM"). [redacted]

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[redacted] Simultaneously, SSA [redacted] entered SSA [redacted] and ET [redacted] into PFM. SSA [redacted] is assigned crew number [redacted] ET [redacted] is assigned crew number [redacted] Finally, SSA [redacted] sent an e-mail to SSA [redacted] and ET [redacted] describing the procedures for installing PFM at Technical Response Unit.

LEAD(s) :

Set Lead 1: (Action)

OPERATIONAL TECHNOLOGY

AT TRU, VA

SSA [redacted] should complete the Bureau Aviation written tests, install PFM, and contact SSA [redacted] for a copilot flight training and evaluation, as well as training in PFM.

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Set Lead 2: (Info)

CIRG

AT MANASSAS, VA

Read and clear.

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Routing

Drafted by: [redacted]

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Approved by: [redacted]

## Filing and Security

Primary Case: 321D-IR-A7788Case Title: (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT

Serial Number: 25

Serialized: 07/13/2009

ALL FBI INFORMATION CONTAINED  
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Initiated: 07/02/2012

DATE 12-31-2013 BY NSICG F54M93K42

## Details

Serial #: 25

Type: EC

Document Title: 6TH ANNUAL SMALL UNMANNED AERIAL SYSTEM USER REVIEW

Approval Date: 07/13/2009

Classification: SN

## Contents:

Precedence: ROUTINE Date: 07/13/2009

To: Operational Technology Attn: TPS/TRU  
SSA [redacted]  
CIRG Attn: FFOUb6  
b7CFrom: CIRG  
ASTOS/ASB/ASU  
Contact: SSA [redacted]

Approved By: [redacted]

Drafted By: [redacted]

Case ID #: 321D-IR-A7788 (Pending)  
319T2-HQ-A148766A-OTD (Pending)Title: UNMANNED AERIAL SYSTEMS;  
BUREAU AIRCRAFT OPERATIONS

Synopsis: 6th Annual Small Unmanned Aerial System User Review

Details: On [redacted] the investigating Agent  
attended the 6th Annual Small Unmanned Aerial System ("SUAS")  
User Review on behalf of the Field Flight Operations Unit.SSA [redacted] of the Technical Response Unit also attended  
on behalf of his unit. The first day's session was held at  
the unclassified level [redacted]  
The second session, held at the secret level, [redacted][redacted] By way of definition, SUASs are generally  
accepted to be unmanned air vehicles [redacted]b6  
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Referral/Consult

Referral/Consult

These FAA restrictions effectively eviscerate most hope of the FBI operationally employing UASs to conduct the surveillance, photography, and communications relay missions being conducted daily by our manned aircraft fleet. This gloomy outlook contrasted starkly with the optimism felt by most conference participants. The other attendees were overwhelmingly from the military special operations community. Representatives from Naval Special Warfare, Army Special Forces and Rangers, and the United States Marine Corps all gave outstanding presentations on SUAS operations and training. All presenters had substantial combat UAS experience overseas. These briefings made it clear that SUASs are performing well, saving American lives, and helping to take enemy lives every day in Iraq and Afghanistan. The difficulty in obtaining COAs and accessing the NAS are, at most, an inconvenience to these military operators because the restrictions make home station training less convenient and less available. Because these forces operate outside of the NAS, friction with the FAA, does not have an operational impact.

For the FBI, the situation is reversed. Lack of NAS access prevents us from using SUAS operationally. While we can train on military bases, our opportunities to actually use this training to conduct our domestic law enforcement and intelligence missions is severely limited. SSA [redacted] described a recent successful deployment by his unit of [redacted] UAS overseas. He reported that the system performed well and the host nation was thankful for the assistance. This performance demonstrated that the primary barriers to routine UAS employment are regulatory and not technical.

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Referral/Consult

Referral/Consult

The technical presentations did a good job of  
highlighting evolving SUAS capabilities.

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The classified briefings  
highlighted new SUAS capabilities that, while very impressive,  
are not particularly relevant to the FBI mission.

In conclusion, the biggest challenge to Bureau use  
of UASs is routine access to the NAS. The status quo will not  
be resolved before 2012 at the earliest and the nature of that  
resolution is not predictable. If TRU succeeds in getting its  
training COA south of Quantico, obtaining emergency COAs may  
become easier. Even if this happens, the requirement to  
notify the public of a COA may possibly restrict UAS  
employment to situations in which FBI involvement is already  
public knowledge. FFOU will continue to partner with TRU on  
this emerging technology.

LEAD(s) :

Set Lead 1: (Info)

OPERATIONAL TECHNOLOGY

AT TRU, VA

Read and clear.

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Routing

Drafted by:

Approved by:

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## Filing and Security

Primary Case: 321D-IR-A7788Case Title: (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT

Serial Number: 41

Serialized: 11/10/2010

Initiated: 07/02/2012

ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED  
DATE 12-31-2013 BY NSICG F54M93K42

## Details

Serial #: 41

Type: EC

Document Title: RECOMMEND STANDARD OPERATING PROCEDURES (SOP) FOR THE

Approval Date: 11/10/2010

Classification: U

## Contents:

Precedence: ROUTINE Date: 11/10/2010

To: Critical Incident Response Attn: ASC [REDACTED] ASB  
Group IIC [REDACTED] ASB/FFO  
SSA [REDACTED] ASB/FFOb6  
b7CFrom: Operational Technology  
Traditional Technology Section/Video Surveillance Unit  
Contact: SSA [REDACTED]

Approved By: [REDACTED]

Drafted By: [REDACTED]

Case ID #: 321D-IR-A7788 (Pending)

Title: Unmanned Aerial Vehicle (UAV)  
Unmanned Ground Vehicle (UGV)Synopsis: Recommend Standard Operating Procedures (SOP) for the  
request and implementation of services for UAV [REDACTED]  
[REDACTED] by field offices and operating  
requirements and parameters for equipment and personnel operating  
these vehicles.

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Enclosure(s): U.S. Department of Transportation, Federal  
Aviation Administration, Air Traffic  
Organization Policy NJ07110.52 effective  
12/16/2009Federal Aviation Administration, Memorandum,  
Unmanned Aircraft Systems Operations in the  
U.S. National Airspace System - Interim  
Operational Approval Guidance, dated 12/16/2005  
Interim Operational Approval Guidance 08-01  
Unmanned Aircraft Systems, Operations in the  
U.S. National Airspace System dated 03/13/2008Details: Operational Technology Division (OTD)/Traditional  
Technology Section (TTS)/Video Surveillance Unit (VSU) currently  
has an inventory of UAVs [REDACTED] These are available  
for deployment as needed in support of field office investigations.

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## Filing and Security

Primary Case: 321D-IR-A7788Case Title: (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT

Serial Number: 42

Serialized: 12/20/2010

Initiated: 07/02/2012

ALL INFORMATION CONTAINED  
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DATE 12-31-2013 BY NSICG F54M93K42

## Details

Serial #: 42

Type: OTHER

Document Title: ENCLOSURE

Approval Date: 12/20/2010  
Classification: U

Contents: Airworthiness Statement

Re: FAA UAPO (AIR-160) Interim Operational Approval Guidance 08-01

Proponent: Federal Bureau of Investigation, Aviation and  
Surveillance Branch, Attn: [REDACTED] Supervisory Special  
Agentb6  
b7C

Aircraft Type: Small UAS - [REDACTED]

b7E

Manufacturer: [REDACTED]

Design Standards: [REDACTED]

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[REDACTED] All [REDACTED] small UAS  
listed on this Airworthiness Statement have a history of proven  
credibility for solid design standards and airworthiness. [REDACTED][REDACTED] All [REDACTED] systems continue to be sold and operated safely by  
the military and several government "public" entities.[REDACTED] though varying in weight and size  
from [REDACTED] run on the same platform. Issuance of a  
singular Airworthiness Statement specifying the details of our  
certification policies and criteria for these unmanned systems  
is, therefore, appropriate.

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Initial FBI Airworthiness Check: Upon acceptance of the UAS from  
[REDACTED] a thorough ground inspection and pre-flight testing based  
upon the manufacturer checklists is accomplished to ensure the  
quality and operation of the system meet the design and  
manufacturing standards known and verified by [REDACTED]

b7E

The UAS is placed in flight and run through all flight maneuvers  
listed in the UAS Operator's Manual. At any time all FBI team  
members performing the test may independently note irregularities  
or issues with the flight.At  
completion of the acceptance testing, the UAS is accepted only  
after a 100% successful all phase operation pre-flight brief,  
ground inspection and pre-flight, launch, flight operations and  
maneuvers, landing and recovery, post-flight brief. Anything less

than 100% airworthiness check success results in non-acceptance of the UAS and rescheduling of the acceptance testing once the noted discrepancies are resolved or corrected.

Continuing Airworthiness Standards:

The FBI policies and criteria for safety-of-flight airworthiness standards for manned aviation are utilized for the unmanned aircraft systems. Our current manned aircraft maintenance program is based on 14 CFR 91.409(d), an approved progressive inspection program, under the supervision of the Washington FSDO for the majority of our fleet with legacy aircraft managed under a system of an annual 100 hour inspection program that ensures our aircraft maintain safety-of-flight (SOF) airworthiness standards.

Additionally, utilizing the guidelines [redacted] we have tailored an airworthiness certification program for our three UAS' that include reviewing and accepting the manufacturer airworthiness standards and verifying that each UAS is airworthy and continues to be airworthy.

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Design Criteria and standards for the aircraft, systems, and the operator's manuals are accomplished by [redacted] We accept their standards based upon the following criteria: a thorough [redacted] brief, knowledge and understanding of the history of the UAS' successes or failures and developments in design and operation, and acceptance testing we accomplish with [redacted] prior to receiving the UAS.

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Our UAS policy and criteria for continued airworthiness is with the understanding that there are two levels of maintenance: operator and depot.

Allowable operator maintenance is listed in the Operator's Manual and is accomplished under our Aviation Section protocols and the below listed UAS airworthiness certification standards.

Depot level maintenance is accomplished by [redacted] and is followed with an acceptance testing where we again accept their standards prior to operating the UAS as an FBI owned and operated public aircraft under our Airworthiness Statement.

b7E

All [redacted] Guidelines not listed in the below table are either not applicable to the unmanned system or are included in the manufacturer standards process that we review, verify, and accept as an acceptable standard based on the process described in the design and criteria standards paragraph above.

b7E

b7E



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**Verifying Safety-of-Flight and Continuous Airworthiness:** The Airworthiness Statement is issued with the full understanding that each opportunity to operate the UAS requires a thorough visual and system check of the aircraft and the ground control station systems to ensure the continued airworthiness for entering "Class G" airspace. The pre-flight checklist provided in the Operator's Manual is thorough and complete. We utilize this checklist for each pre-flight and readily delay or abort the mission for any failure to pass the pre-flight.

**Risk Mitigation Standards:** Currently, each of our UAS' are operated less than [redacted] hours per year. The size and weight of our unmanned systems are [redacted] and we fly within VFR rules [redacted]. The risk to mitigate for the two main hazards of unmanned flight: 1) air collision risk to people and property in flight, and 2) ground collision risk to people and property on the ground is considered low to very low risk for operation of our [redacted] UAS'.

Our flights are conducted within visual observation per the COA. The Observer and Pilot are qualified and current, fly one UAS at a time, and are trained in the sterile cockpit rule during launching, landing, and all emergency or extraordinary events. The Observer and Pilot communicate through direct communication and we have loss of communication procedures established should an emergency cause a separation or inability to directly communicate. Applicable ATC, military control, when required, and emergency contact numbers are readily available during each operation.

Our safety procedures for loss of link, mid-air obstacles, or anytime the aircraft shows signs of unstable or unsafe operation allows the pilot to resume [redacted]

## Filing and Security

Primary Case: 321D-IR-A7788Case Title: (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT

Serial Number: 44

Serialized: 01/18/2011

Initiated: 07/02/2012

ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED  
DATE 12-31-2013 BY NSICG F54M93K42

## Details

Serial #: 44

Type: EC

Document Title: FBI ACCEPTS DELIVERY OF [REDACTED] UAS AND TRAINS

b7E

Approval Date: 01/18/2011

Classification: SN

## Contents:

Precedence: ROUTINE Date: 01/18/2011

To: Operational Technology Attn: SSA [REDACTED]  
CIRG Attn: Aviation Support Unit [REDACTED]  
SSA [REDACTED]  
CIRG Attn: Aviation Support Unit [REDACTED]  
SSA [REDACTED]b6  
b7CFrom: CIRG  
SAS/ASB/FFOU  
Contact: SSA [REDACTED]Approved By: [REDACTED]  
[REDACTED]

Drafted By: [REDACTED]

Case ID #: 321D-IR-A7788 (Pending)

Title: UNMANNED AERIAL SYSTEMS;  
BUREAU AIRCRAFT OPERATIONSSynopsis: FBI Accepts Delivery of [REDACTED] UAS and Trains  
Operators.

b7E

Details: The investigating Agent attended [REDACTED] certification  
course at [REDACTED] graduating with SSA [REDACTED] and Electronics  
Technicians [REDACTED] forming the first Bureau class of certified unmanned  
aerial system ("UAS") pilots under the current joint VSU/FFOU  
program. During the class, the FBI took delivery of its [REDACTED]  
[REDACTED] The primary instructor was [REDACTED] see  
descriptive data. [REDACTED] is a retired U.S. Air Force master  
sergeant forward air controller with extensive combat experience.b6  
b7C  
b7E

[Redacted]

## Descriptive Data:

## Reference

Name

Last: [Redacted]

First: [Redacted]

Race: W

Sex: M

Phone #: [Redacted]

Miscellaneous: [Redacted]

[Redacted]

## LEAD(s):

Set Lead 1: (Info)

OPERATIONAL TECHNOLOGY

AT VSU, VA

Read &amp; clear.

Set Lead 2: (Action)

CIRG

AT ASU, VA

Training: Record training of SSA [Redacted] SSA  
[Redacted] and Electronics Technicians [Redacted]  
[Redacted] as qualified operators of  
[Redacted] UAS.

Set Lead 3: (Info)

CIRG

AT ASU, VA

Research &amp; Development: [Redacted]

[Redacted]

\*\*

[Redacted]

**Routing**

Drafted by: 

Approved by: 

## Filing and Security

Primary Case: 321D-IR-A7788Case Title: (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT

Serial Number: 45

Serialized: 01/20/2011

Initiated: 07/02/2012

ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED  
DATE 12-31-2013 BY NSICG F54M93K42

## Details

Serial #: 45

Type: EC

Document Title: [REDACTED] UAS.

b7E

Approval Date: 01/20/2011

Classification: SN

## Contents:

Precedence: ROUTINE Date: 01/20/2011

To: Operational Technology Attn: Video Surveillance Unit  
SSA [REDACTED]b6  
b7CFrom: CIRG  
SAS/ASB/FFOU  
Contact: SSA [REDACTED]

Approved By: [REDACTED]

Drafted By: [REDACTED]

Case ID #: 321D-IR-A7788 (Pending)

Title: UNMANNED AERIAL SYSTEMS;  
BUREAU AIRCRAFT OPERATIONS

Synopsis: [REDACTED] UAS.

b7E

Details: On 01/20/2011, [REDACTED] see descriptive data, briefed personnel from  
FFOU, ASU, and VSU on [REDACTED] unmanned aerial  
system. [REDACTED]b6  
b7C  
b7E[REDACTED] Program managers from VSU and FFOU  
concurred that, while the air vehicle may offer interesting  
capabilities, further investigation of the product is not  
warranted at this time due to immaturity of the company and  
product along with continued barriers to access to the National  
Airspace System.

## Descriptive Data:

## Reference

Name -

Last: [REDACTED]

b6  
b7C

First [REDACTED]

Race: W

Sex: M

Address(es) -

House #: [REDACTED]

Street Name [REDACTED]

Street Suffix: [REDACTED]

Unit:   
City:   
State:   
Postal Code:   
Phone #:   
Miscellaneous:

b6  
b7C  
b7E

LEAD(s):

Set Lead 1: (Info)

OPERATIONAL TECHNOLOGY

AT VSU, VA

Read & clear.

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Routing

Drafted by:

b6  
b7C

Approved by:

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## Filing and Security

Primary Case: 321D-IR-A7788Case Title: (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT

Serial Number: 51

Serialized: 03/04/2011

Initiated: 07/02/2012

ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED  
DATE 12-31-2013 BY NSICG F54M93K42

## Details

Serial #: 51

Type: EC

Document Title: [REDACTED] PROFICIENCY FLIGHTS AT TEVOC [REDACTED]

b7E

Approval Date: 03/04/2011

Classification: SN

## Contents:

Precedence: ROUTINE Date: 03/04/2011

To: CIRG Attn: SSA [REDACTED]  
Operational Technology Attn: SSA [REDACTED]

b6

b7C

From: CIRG  
SAS/ASB/FFOU  
Contact: SSA [REDACTED]

Approved By: [REDACTED]

Drafted By: [REDACTED]

Case ID #: 321D-IR-A7788 (Pending)

Title: UNMANNED AERIAL SYSTEMS;  
BUREAU AIRCRAFT OPERATIONS

Synopsis [REDACTED] Proficiency Flights at TEVOC [REDACTED]

b7E

Details: On 02/23/2011, VSU/FFOU conducted proficiency flight training in the restricted airspace above TEVOC at the FBI Academy using [REDACTED] unmanned aerial system. Each participant, except [REDACTED] logged time as both vehicle operator ("VO") and mission operator ("MO"). Flight times are listed below:

SSA [REDACTED]

SSA [REDACTED]

ET [REDACTED]

ET [REDACTED]

ET [REDACTED]

Each sortie involved a hand launch by the MO and a landing by the VO. The writer entered these missions into Professional Flight Management as flight strip number [REDACTED]

b7E

LEAD(s):

CREW-3039

11/7/2013 3:50 PM

Set Lead 1: (Info)

CIRG

AT ASU, VA

Training: Read & clear.

Set Lead 2: (Info)

OPERATIONAL TECHNOLOGY

AT VSU, VA

Read & clear.

\*\*

=====

Routing

Drafted by: [redacted]

Approved by: [redacted]

b6  
b7C

## Filing and Security

Primary Case: 321D-IR-A7788Case Title: (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT

Serial Number: 52

Serialized: 03/10/2011

Initiated: 07/02/2012

## Details

Serial #: 52

Type: EC

Document Title: (U) FORWARD WHITE PAPER TO PROVIDE BACKGROUND

Approval Date: 03/10/2011

Classification: S

## Contents:

Precedence: PRIORITY Date: 03/10/2011

To: [REDACTED] Attn: SSA [REDACTED]

b6  
b7C  
b7EFrom: Operational Technology  
Traditional Technology Section/Video Surveillance Unit  
Contact: SSA [REDACTED]

Approved By: [REDACTED]

Drafted By: [REDACTED]

Case ID #: 321D-IR-A7788 (Pending)

Title: (U) Unmanned Aircraft Systems (UAS)

Synopsis: (U) Forward White Paper to provide background information for the research, determination, and submission of the request for Export License under the International Traffic in Arms Regulation (ITAR), if necessary, for three Unmanned Aircraft Systems (UAS) owned and operated by the FBI.

~~Classified by: F76M17K45~~  
~~Derived From : FBI NSISCG-20090615~~  
~~Declassify On: 20360310~~

Enclosure(s): (U) White Paper titled "ITAR for FBI UAS"

Details: (U) On 03/09/2011, UC [REDACTED] ET [REDACTED] met with SSA [REDACTED] to discuss [REDACTED] unmanned aircraft systems (UAS) owned and operated by the Video Surveillance Unit (VSU) that currently possess an ITAR warning notice on the front cover of the Operators Manual.

b6  
b7C  
b7E

(U) SSA [REDACTED] provided background information on the ITAR export control laws. UC [REDACTED] and ET [REDACTED] discussed the UAS, the information that would most likely be shared with the foreign nationals, the location, time, and the countries involved.

(U) The enclosed White Paper provides additional details to assist in the research, determination, and if necessary, submission of the request for an Export License under ITAR for conversations and sharing of information during meetings scheduled to occur from 03/31/2011 through 04/01/2011.

LEAD(s) :

Set Lead 1: (Action)

b7E

AT WASHINGTON, DC

(U) Request transmittal of White Paper.

CC: VSU - [redacted]  
VSU [redacted]  
VSU [redacted]  
CMU [redacted]  
\*\* [redacted]  
\_\_\_\_

b6  
b7C

**Routing**

Drafted by: null

Approved by: [redacted]

## Filing and Security

Primary Case: 321D-IR-A7788Case Title: (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT

Serial Number: 82

Serialized: 11/29/2011

ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED  
DATE 12-31-2013 BY NSICG F54M93K42

## Details

Serial #: 82

Type: EC

Document Title: [REDACTED]

TRAINING, [REDACTED]

b7E

Approval Date: 11/29/2011

Classification: SN

## Contents:

Precedence: ROUTINE Date: 11/29/2011

To: Operational Technology Attn: SSA [REDACTED]

b6

ET [REDACTED]

b7C

CIRG Attn: ISA [REDACTED]

b7E

Attn: SA [REDACTED]

SA [REDACTED]

SA [REDACTED]

From: CIRG

b6

SAS/ASB/FFOU [REDACTED]

b7C

Contact: SSA [REDACTED]

Approved By [REDACTED]

Drafted By: [REDACTED]

Case ID #: 321D-IR-A7788 (Pending)  
348C-IR-A7376 (Pending)Title: UNMANNED AERIAL SYSTEMS;  
FIELD FLIGHT OPERATIONS UNIT;  
BUREAU AIRCRAFT OPERATIONS

Synopsis: [REDACTED]

Training, [REDACTED]

b7E

Reference: 321D-IR-A7788 Serial 81  
319X-HQ-A1487710-CIRG Serial 398

Details: As described in the referenced Serials, the joint FFOU/VSU Unmanned Aerial System ("UAS") team will field an operational UAS capability to [REDACTED] during fiscal year 2012. This forms FFOU Goal #11 with Objective #1 to field a system to [REDACTED] and Objective #2 to train [REDACTED] pilots from [REDACTED] to [REDACTED] operate the system. To achieve these goals, [REDACTED] SAS [REDACTED] [REDACTED] will attend manufacturer led training at [REDACTED] with travel days on [REDACTED] SA [REDACTED] [REDACTED] is the designated alternate. ISA [REDACTED] will also attend.

b6

b7C

b7E

The training will be conducted by [REDACTED]

This class

will [REDACTED]

cover [REDACTED] SSAs [REDACTED]

b6

b7C

b7E

[REDACTED] both already UAS pilots in command, will travel on [REDACTED] and be present for training from [REDACTED] to conduct [REDACTED] transition training. ET [REDACTED] [REDACTED] will be present during the entire training period to assist the students and instructors.

b6

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[REDACTED] Participants should fly into Los Angeles International Airport ("LAX"). ET [REDACTED] will rent a large sport utility vehicle to transport equipment and participants. No one else is authorized to rent a car. Participants should coordinate airline reservations with ET [REDACTED] to minimize delays. He will reserve hotel rooms for all participants in order to ensure that everyone is at the same hotel. During [REDACTED] overnight temperatures may fall into the thirties and daytime temperatures may be in the 30s or 40s. Almost all of the training will be conducted outside so participants should bring appropriate clothing and footwear. Some training will be conducted at night.

b6

b7C

b7E

ASB authorizes the above listed personnel to travel to [REDACTED] and incur expenses needed for this event using [REDACTED] No other use of the TR# is authorized. Use case number 348C-IR-7376. When filling out your SF-1012's and FD-540, use Program: Training S4 / Subprogram: CIRG-Specialties-Aviation SE. Email or fax copies of FD-540/SF-1012 to MAPA [REDACTED]

b6

b7C

b7E

LEAD(s) :

Set Lead 1: (Info)

OPERATIONAL TECHNOLOGY

AT VSU, VA

Read & clear.

Set Lead 2: (Action)

CIRG

AT FFOU, VA

ISA [REDACTED] Attend training as described above.

b6

b7C

b7E

Set Lead 3: (Action)

AT [REDACTED]

SA [REDACTED] and SA [REDACTED]  
Attend training as described above.

\*\*

**Routing**

Drafted by:

Approved by:

b6

b7C

## Filing and Security

Primary Case: 321D-IR-A7788Case Title: (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT

Serial Number: 84

Serialized: 11/22/2011

Initiated: 07/02/2012

ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED  
DATE 12-31-2013 BY NSICG E54M93W42

## Details

Serial #: 84

Type: EC

Document Title: REQUEST FOR CANDIDATES TO ATTEND [REDACTED]

b7E

Approval Date: 11/22/2011

Classification: U

## Contents:

Precedence: DEADLINE 12/15/2011 Date: 11/22/2011

To: CIRG Attn: A/SC [REDACTED]  
UC [REDACTED]  
SSA [REDACTED]b6  
b7CFrom: Operational Technology  
Traditional Technology Section/Video Surveillance Unit  
Contact: [REDACTED]

Approved By: [REDACTED]

Drafted By: [REDACTED]

Case ID #: 321D-IR-A7788

Title: Unmanned Aerial Systems;  
Field Flight Operations Unit;  
Bureau Aircraft OperationsSynopsis: Request for candidates to attend [REDACTED]  
initial Unmanned Aerial Vehicle [REDACTED] Training in [REDACTED]

b7E

Details: The Video Surveillance Unit (VSU) Unmanned Aerial Vehicle's (UAV) team is currently composed of [REDACTED] certified UAV pilots from VSU and [REDACTED] certified UAV Pilot from CIRG. Due to the recent increase in UAV mission requests in the past year (FY 2011) and the forecasted new missions in the upcoming years, VSU has budgeted funding to train an additional [REDACTED] UAV pilots in FY 2012.

b7E

Currently, VSU has [REDACTED] active Certificates of Waiver or Authorization (COA) with several more awaiting final approval from the Federal Aviation Administration (FAA), and several more awaiting final approval for submission to the FAA. Once approved, these COAs will require the current UAV team to travel to these locations to provide UAV support to the requesting Field Offices. Since the current team is composed of [REDACTED] an additional [REDACTED] will be required to effectively service these requests.

b7E

Currently FBI UAV Pilots are required to be certified pilots (Private Pilot) and hold a current Class 2 Medical Certificate. Observers are required to have passed the Private Pilot Knowledge test and hold a current Class 2 Medical Certificate.

Qualifications for candidates to the Initial UAV Training are at a minimum, a current Class 2 Medical Certificate and enrollment in an approved Private Pilot Program. Upon completion of the Initial UAV Training, the certified (Private Pilot) UAV Pilot can act as Pilot in Command of the UAVs. The non-rated manned aircraft pilot can only act as Observers or Mission Operator until completion of the Private Pilot certificate.

Inasmuch as CIRG's Field Flight Operations Unit (FFOU) has actively supported the UAV Program in providing these services to the Field, and has actively participated in UAV missions, the VSU is requesting FFOU to identify two qualified candidates to attend Initial UAV [redacted] training to be conducted in [redacted]

b7E

The FFOU and VSU management have agreed that upon successful completion of the UAV training and certification of the candidates provided by FFOU, these candidates will support the joint VSU/FFOU UAV Program by actively participating in UAV deployments [redacted]

b7E

In addition, the FFOU personnel selected will incur travel costs, lodging and per diem for the UAV Training. Tuition cost will be borne by the VSU.

LEAD(s) :

Set Lead 1: (Action)

CIRG

AT MANASSAS, VA

Concur with the VSU's request and identify two candidates to attend Initial UAV Training in [redacted]

b7E

CC: [redacted] QTERF  
[redacted] QTERF  
[redacted] QTERF

b6

b7C

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**Filing and Security****Primary Case:** 321D-IR-A7788**Case Title:** (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT**Serial Number:** 86**Serialized:** 01/01/2012**Initiated:** 07/02/2012**Details****Serial #:** 86**Type:** OTHER**Document Title:** RECENT RAPID ADVANCEMENTS OF UNMANNED AIRCRAFT SYSTEMS (UAS)**Approval Date:** 01/01/2012**Classification:** SN**Contents:** No Content Available

ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED  
DATE 12-31-2013 BY NSICG F54M93K42

**Filing and Security****Primary Case:** 321D-IR-A7788**Case Title:** (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT**Serial Number:** 88**Serialized:** 12/12/2011**Initiated:** 07/02/2012**Details****Serial #:** 88**Type:** OTHER**Document Title:** LA TIMES ARTICLE

b7E

**Approval Date:** 12/12/2011**Classification:** SN**Contents:** No Content Available

ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED  
DATE 12-31-2013 BY NSICG F54M93K42

## Filing and Security

Primary Case: 321D-IR-A7788Case Title: (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT

Serial Number: 89

Serialized: 02/06/2012

Initiated: 07/02/2012

ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED  
DATE 12-31-2013 BY NSICG F54M93K42

## Details

Serial #: 89

Type: EC

Document Title: TO NOTIFY [REDACTED] OF TRAVEL TO ATTEND CONFERENCE AND

b7E

Approval Date: 02/06/2012

Classification: SN

## Contents:

Precedence: ROUTINE 8 Date: 02/06/2012

To: [REDACTED]

b7E

From: CIRG  
SAS/ASB/FFOU

Contact: SSA [REDACTED]

b6  
b7C

Approved By: [REDACTED]

Drafted By: [REDACTED]

Case ID #: 321D-IR-A7788 (Pending)

Title: UNMANNED AERIAL SYSTEMS;  
FIELD FLIGHT OPERATIONS UNIT;  
BUREAU AIRCRAFT OPERATIONSSynopsis: To notify [REDACTED] of travel to attend conference and  
deliver presentation.

b7E

Administrative: Per telcal on 02/06/2012 between SSA [REDACTED]  
[REDACTED] and LOA [REDACTED]b6  
b7C  
b7EDetails: Recent rapid advances in unmanned aircraft aerial  
systems ("UAS") hold great promise to enhance law enforcement  
capabilities. To survey these opportunities, [REDACTED]

b7E

[REDACTED] The writer has been  
invited to deliver a presentation on legal challenges to UAS  
implementation in the United States' National Airspace System.  
The presentation and conference will be entirely unclassified.  
The writer's primary point of contact is [REDACTED]b6  
b7C  
b7E[REDACTED] Contact with  
other law enforcement officers is anticipated.The FBI's UAS program is a joint venture between the  
CIRG's Field Flight Operations Unit and Operational Technology's  
Video

CREW-3050

11/7/2013 3:42 PM

Surveillance Unit. The writer is the FFOU program manager for UAS operations.

LEAD(s) :

Set Lead 1: (Info)

[Redacted]

b7E

Read & clear.

\*\*

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Routing

Drafted by:

[Redacted]

b6

b7C

Approved by:

## Filing and Security

Primary Case: 321D-IR-A7788Case Title: (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT

Serial Number: 90

Serialized: 02/07/2012

ALL INFORMATION CONTAINED

HEREIN IS UNCLASSIFIED

Initiated: 07/02/2012

DATE 12-31-2013 BY NSICG F54M93K42

## Details

Serial #: 90

Type: EC

Document Title: FIRST FIELD BASED UNMANNED AERIAL SYSTEM CAPABILITY

Approval Date: 02/07/2012

Classification: SN

## Contents:

Precedence: ROUTINE Date: 02/07/2012

To: Operational Technology Attn: Video Surveillance Unit

CIRG Attn: SSA [redacted]

[redacted] Attn: SA [redacted]

b6

b7C

b7E

From: CIRG

SAS/ASB/FFOU

Contact: SSA [redacted]

Approved By [redacted]

Drafted By: [redacted]

Case ID #: 321D-IR-A7788 (Pending)

Title: UNMANNED AERIAL SYSTEMS;  
FIELD FLIGHT OPERATIONS UNIT;  
BUREAU AIRCRAFT OPERATIONS

Synopsis: First field based Unmanned Aerial System capability created; Goal obtained.

Reference: 319X-HQ-A1487710-CIRG Serial 398

321D-IR-A7788 Serial 81

321D-IR-A7788 Serial 82

321D-IR-A7788 Serial 84

Administrative: Draft reviewed by VSU per telcal on 2/7/2012.

Details: The Field Flight Operations Unit's ("FFOU") Program Goals and Objectives for fiscal year 2012 lists Goal #11 as the establishment of the first field based Unmanned Aerial System ("UAS") capability in the FBI. The first and third objectives have been satisfied while the second is under review to determine whether or not it has been satisfied.

Objective one was to work with the Video Surveillance Unit ("VSU") to assign a UAS to [redacted]. This was satisfied on [redacted] when SA [redacted] took possession of [redacted]. VSU will adjust the quantity and type of air vehicles as needed.

b6

b7C

b7E

Objective three was to train two personnel from [redacted]

b7E

to operate the UAS. This was accomplished on [REDACTED] when [REDACTED] Agents [REDACTED] graduated from a training course conducted by [REDACTED]. Both Agents are FBI pilots and now designated as Pilots in Command in [REDACTED]. The platform consists of [REDACTED]. On [REDACTED] the writer provided [REDACTED] to SA [REDACTED]. Thus, both pilots should have pilot in command privileges in [REDACTED] while only SA [REDACTED] should have PIC privileges in [REDACTED]. SA [REDACTED] will remain a copilot in [REDACTED] until she completes [REDACTED].

Objective two was to certify [REDACTED] FFOU program manager as a UAS trainer through [REDACTED].

[REDACTED] This objective should be reviewed based on the training experience during the class described above. It is the writer's opinion that additional training by [REDACTED] is probably not warranted given the high cost and likelihood that further training will not significantly enhance recipients' abilities to instruct on the system. Further discussions will occur between FFOU and VSU to resolve whether or not the goal has been satisfied.

[REDACTED] may dispatch and fly UAS missions using the procedures specified for manned aircraft in the Bureau Aviation Regulations ("BAR") [REDACTED]

[REDACTED] Both of these requirements must be satisfied to conduct a field based UAS mission. These missions may be flown only within existing Certificate of Authorization or Waiver ("COA") airspace or in restricted areas with approval of the controlling authority, usually range control. [REDACTED] is not authorized to directly contact the FAA to renew or modify existing COAs or to create new ones. UAS flights must be entered in Professional Flight Management and recorded on the monthly Excel spreadsheet.

LEAD(s) :

Set Lead 1: (Info)

OPERATIONAL TECHNOLOGY

AT VSU, VA

Read & clear.

Set Lead 2: (Action)

CIRG

AT ASU, VA

Update pilot training records to reflect SAs [REDACTED] [REDACTED] status as PICs in the [REDACTED]

Set Lead 3: (Info)

AT [redacted]

b7E

[redacted] may dispatch and fly UAS missions using the procedures specified for manned aircraft in the BAR in existing COA airspace or in restricted areas with approval of the controlling authority. [redacted] is not authorized to directly contact the FAA. UAS flights must be entered in Professional Flight Management and recorded on the monthly Excel spreadsheet.

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—

Routing

Drafted by: [redacted]

b6

b7C

Approved by: [redacted]

—

## Filing and Security

Primary Case: 321D-IR-A7788Case Title: (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT

Serial Number: 100

Serialized: 03/29/2012

Initiated: 07/02/2012

ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED  
DATE 01-02-2014 BY NSICG F54M93K42

## Details

Serial #: 100

Type: EC

Document Title: GUIDANCE FROM FAA UNMANNED AIRCRAFT PROGRAM OFFICE.

Approval Date: 03/29/2012

Classification: SN

## Contents:

Precedence: ROUTINE Date: 03/29/2012

To: Operational Technology Attn: Video Surveillance Unit

From: CIRG

SAS/ASB/FFOU

Contact: SSA [redacted]

b6  
b7C

Approved By [redacted]

Drafted By: [redacted]

Case ID #: 321D-IR-A7788 (Pending)

Title: UNMANNED AERIAL SYSTEMS;  
FIELD FLIGHT OPERATIONS UNIT;  
BUREAU AIRCRAFT OPERATIONS

Synopsis: Guidance from FAA Unmanned Aircraft Program Office.

Details: On 03/29/2012, per telcal, the investigating Agent  
discussed unmanned aerial system ("UAS") training issues with [redacted]

Systems, [redacted]

[redacted] reported that the FBI could conduct  
internal UAS training and pilot certification without instructors  
first attending manufacturer provided training. The only  
prerequisite to such training is that all attendees be licensed  
pilots. The investigating Agent invited [redacted] to send an  
FAA employee to attend the first such in-service.b6  
b7CFollowing the conversation, the investigating Agent  
contacted ET [redacted] at the Video Surveillance Unit to  
recommend that approximately [redacted] in VSU funds currently  
being held for a train-the-trainer class be reprogrammed for the  
purchase of additional UAS system components (most likely [redacted]  
air vehicles). ET [redacted] agreed to pursue implementing this.b6  
b7C  
b7EIn accordance with the FAA's opinion, Aviation  
Surveillance Branch will initiate planning to conduct in-service  
training for new UAS pilots. The target date for such training  
is the first quarter of fiscal year 2013.

CREW-3055

11/7/2013 3:40 PM

LEAD(s) :

Set Lead 1: (Info)

OPERATIONAL TECHNOLOGY

AT VSU, VA

Read & clear.

\*\*

b6  
b7C

Routing

Drafted by: 

Approved by: 

## Filing and Security

Primary Case: 321D-IR-A7788Case Title: (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT

Serial Number: 101

Serialized: 03/29/2012

ALL INFORMATION CONTAINED

HEREIN IS UNCLASSIFIED

DATE 01-02-2014 BY NSICG F54M93K42

Initiated: 07/02/2012

## Details

Serial #: 101

Type: OUTLET

Document Title: RE [REDACTED]

b7E

Approval Date: 03/29/2012

Classification: SN

Contents: March 29, 2012  
Federal Aviation Administration  
800 Independence Avenue SW  
Washington, DC 20591

Attention: Unmanned Aircraft System Office

Re: [REDACTED]

b6

b7C

Dear [REDACTED]

b7E

The Federal Bureau of Investigation ("FBI") affirms the airworthiness of [REDACTED] Small Unmanned Aircraft System. The FBI operates a manned aircraft fleet pursuant to established policies for airworthiness in the acquisition and maintenance of the aircraft. We have evaluated the [REDACTED] utilizing our established policies and our tailored UAS airworthiness certification criteria and found [REDACTED] to be airworthy for our intended and approved operations.

b7E

Proponent: Federal Bureau of Investigation, Critical Incident Response Group, Surveillance and Aviation Section, Field Flight Operations Unit, Attn: Supervisory Special Agent [REDACTED]

b6

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Aircraft Type: [REDACTED]  
Small Unmanned Aircraft System.

b7E

Manufacturer: [REDACTED]

b7E

Design Standards: [REDACTED]

Initial FBI Airworthiness Check: Upon acceptance of the UAS from [REDACTED] a thorough ground inspection and pre-flight test based upon [REDACTED] checklist was accomplished to ensure the operation of the system meets design and manufacturing standards known and verified by [REDACTED]. During acceptance testing the system was flown and all normal flight maneuvers listed in the UAS Operator's Manual [REDACTED] demonstrated. At the completion of testing the UAS was accepted only after a completely successful demonstration of system performance through all phases of operation.

b7E

Continuing Airworthiness Standards: The FBI follows continuing airworthiness procedures for inspection and maintenance as detailed in the above described military SUAS manual. Operator level maintenance is performed in the field while all higher level maintenance is performed by [redacted]

b7E

Design Criteria and Standards: Design standards for the system and its operator's manuals are accomplished by [redacted] and accepted by the FBI. The system and the FBI's operation of it complies with all applicable provisions in [redacted]

Verifying Safety-of-Flight and Continuous Airworthiness: This Airworthiness Statement is issued with the full understanding that each opportunity to operate the UAS requires a thorough visual and system check of the system to ensure continued airworthiness. The pre-flight checklist provided in the Operator's Manual is thorough and complete. The FBI uses and complies with this checklist for each operation.

Risk Mitigation Standards: [redacted]

b7E

[redacted]

b7E

Sincerely,

[redacted]

Supervisory Special Agent

b6

b7C

## Filing and Security

Primary Case: 321D-IR-A7788Case Title: (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT

Serial Number: 102

Serialized: 04/10/2012

Initiated: 07/02/2012

ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED  
DATE 01-02-2014 BY NSICG F54M93K42

## Details

Serial #: 102

Type: EC

Document Title: (U) UAS TEST SITE REQUEST FOR COMMENTS, 04/10/2012.

Approval Date: 04/10/2012

Classification: SN

## Contents:

Precedence: ROUTINE Date: 04/10/2012

To: Operational Technology Attn: Video Surveillance Unit

From: CIRG  
SAS/ASB/FFOU  
Contact: SSA [REDACTED]b6  
b7C

Approved By [REDACTED]

Drafted By: [REDACTED]

Case ID #: 321D-IR-A7788 (Pending)

Title: UNMANNED AERIAL SYSTEMS;  
FIELD FLIGHT OPERATIONS UNIT;  
BUREAU AIRCRAFT OPERATIONS

Synopsis: (U) UAS Test Site Request for Comments, 04/10/2012.

Details: (U) On 04/10/2012, the investigating Agent participated in a web based seminar hosted by the Federal Aviation Administration ("FAA"). The topic of the presentation was the solicitation of comments on proposed unmanned aerial system ("UAS") test ranges for use in evaluating integration of UASs into the National Airspace System. The conference was open to the public and journalists reportedly participated. As all statements were on the record, the investigating Agent did not speak.

(U) FAA employees [REDACTED] were the presenters. The main topic was the review of the FAA Modernization and Reform Act of 2012 ("Act") and the current notice of proposed rule making concerning the test ranges and the associated pending request for comment. This requirement was included in the Act by Congress. The FAA shall determine the location of [REDACTED] test ranges which shall be operational within [REDACTED]

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[REDACTED] FAA-2012-0252 is the Federal Register document number for the requirements concerning test ranges. The ranges are intended to test a variety of UAS capabilities such as conventional takeoff and landing, high speed flight, maritime capability, operations at very high altitude, and evaluation of dissimilar aircraft in multiple altitude structures. Geographic and climatic diversity is a goal for the test ranges. The FAA will not

fund the operation of these test ranges. Each user wanting to operate a range must demonstrate ability and experience to do so. Comments are due 05/08/2012. Test site selection will be published in December, 2012. All comments will be posted to [www.regulations.gov](http://www.regulations.gov) or on the FAA website. Additional information is provided at [www.faa.gov/about/initiatives/uas/](http://www.faa.gov/about/initiatives/uas/).

(U) Relevant questions and answers are discussed below. One questioner asked about whether the test ranges would allow both civil and public operations. The FAA responded that both civil and public flight operations would be allowed. The tenor of the answers to various questions made clear that the test ranges are meant for use in research and development and not for operational use. The program is intended to allow the FAA to evaluate system safety, aircraft certification, command and control links, control station layout, sense and avoid, environmental impact, and human factors. The request for comments is intended to help define the range selection criteria. No sites have yet been chosen. The funding of the test site will be the responsibility of the proponent. The FAA would not charge for test range use. The question of whether the operator of the test range could assess fees was not answered.

(U//LES) FFOU recommends that the FBI not apply to operate a UAS test range. Our range at Quantico meets our existing and anticipated requirements. Since test ranges would be open to many entities, operating one would quickly become burdensome. The FFOU will continue to monitor the establishment of test ranges with an eye toward conducting training and operational flights in these locations when they are created. The likelihood that significant surveillance targets will present in one of these ranges will probably be low because these ranges will almost certainly be established far from urban areas.

LEAD(s) :

Set Lead 1: (Info)

OPERATIONAL TECHNOLOGY

AT VSU, VA

(U) Read & clear.

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Routing

Drafted by:

Approved by:

b6  
b7C

## Filing and Security

Primary Case: 321D-IR-A7788Case Title: (U//FOUO) FFOU UNMANNED  
AERIAL SYSTEMS - FFOU  
UNMANNED AIRCRAFT

Serial Number: 118

Serialized: 06/13/2012

Initiated: 07/02/2012

ALL INFORMATION CONTAINED

HEREIN IS UNCLASSIFIED

DATE 01-02-2014 BY NSICG F54M93K42

## Details

Serial #: 118

Type: EMAIL

Document Title:  UAS

b7E

Approval Date: 06/13/2012

Classification: SN

Contents: From:  (IR) (FBI)  
Sent: Wednesday, June 13, 2012 10:59 AM  
To:  (FBI)  
Cc:  (IR) (FBI);  
 (OTD) (FBI);  (OTD) (FBI);  
(OTD)  
(FBI);  (IR) (FBI)  
Subject:  UAS

b6

b7C

Classification: UNCLASSIFIED

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FOR RECORD

SERIALIZE TO 321D-IR-A7788

Sir:

Thank you for sending me the information on the  Unmanned Aerial System. I have had a chance to discuss it with my counterparts at the Engineering Research Facility.

b7E

We believe that  offers performance advantages over  although we have not flown  is expected to enter FBI service.  offers the following capabilities:

b3

b7E

Procurement of [redacted] is already underway. The joint FFOU/VSU UAS team looks forward to flying in support [redacted]

Sincerely,

SSA [redacted]  
Field Flight Operations Unit Program Manager  
(CTRG/SAS/ASB/FFOU)  
[redacted] (desk)  
[redacted] (BlackBerry)

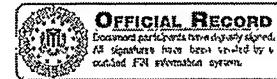
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Classification: UNCLASSIFIED

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FD-1057 (Rev. 5-8-10)

UNCLASSIFIED



## FEDERAL BUREAU OF INVESTIGATION

### Electronic Communication

Title: (U) Unmanned Aerial System Pilot Training,

Date: 07/13/2012

[redacted] FBI  
Academy, Quantico.

To: [redacted]

b7E

b6  
b7C

From: CRIT INCIDENT RESPONSE

Contact: [redacted]

Approved By: A/UC [redacted]

Drafted By: [redacted]

Case ID #: 321D-IR-A7788

122  
(U) FFOU UNMANNED AIRCRAFT - FFOU  
UNMANNED AIRCRAFT

348C-IR-A7374

(U) ASU TRAINING MATTERS - ASU TRAINING  
MATTERS

Synopsis: (U) Announcement of Unmanned Aerial System Pilot Training to  
be held at the FBI Academy at Quantico from [redacted]

b7E

#### Details:

The joint Field Flight Operations Unit ("FFOU") and Video  
Surveillance Unit ("VSU") unmanned aerial system ("UAS") team will  
conduct pilot UAS pilot training at the FBI Academy from [redacted]

[redacted] This communication describes the application and  
selection process for the course. All candidates must apply through  
Virtual Academy.

b7E

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Title: (U) Unmanned Aerial System Pilot Training, [redacted]  
[redacted] FBI Academy, Quantico.

Re: 321D-IR-A7788, 07/13/2012

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The FBI currently operates [redacted]

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[redacted]

Over the last few years, the FBI has employed UASs on a variety of investigative matters, including two investigations of top ten fugitives. While the UAS program began at VSU, it rapidly became a joint venture between VSU and FFOU. Currently, both partners in the team are working to build a robust field based UAS capability. In fiscal year 2012, a system was fielded [redacted]. In fiscal year 2013 [redacted] will acquire equipment and training. It is also anticipated that [redacted] will begin to use UAS technology.

b7E

To facilitate the planned expansion of UAS capabilities, the UAS team will hold in-service training at the FBI Academy [redacted]

[redacted] While the curriculum is still under development, participants can be assured that most of the time will involve actual hands on flying. The schedule should closely resemble the outline shown below:

b7E

- Monday - Legal, theory, assembly, and maintenance [redacted]

b7E

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Title: (U) Unmanned Aerial System Pilot Training, [redacted]  
[redacted] FBI Academy, Quantico.

Re: 321D-IR-A7788, 07/13/2012

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- Tuesday - Basic flight operations (TEVOC)
- Wednesday - Advanced flight operations, Night Operations (TEVOC)
- Thursday - Maritime operations [redacted]
- Friday - Written test, oral exam, checkride

b7E

Travel days will be Sunday and Saturday.

The ideal candidate is a current FBI pilot in command ("PIC") with a strong interest in computers and technology. The minimum qualifications for attendance are:

- FBI Special Agent or Investigative Specialist Aerial
- FAA Private Pilot's License (Commercial or ATP strongly preferred)
- FAA Instrument Rating
- FAA Second Class Medical

Candidates who are not currently FBI pilots will be required to take the 2012 FBI Pilot written test and enroll in the FBI aviation program. UAS pilots are not required to have experience with FBI manned aircraft and are not required to remain current in manned aircraft.

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[redacted] Tactical experience is desirable but not required. Like all FBI pilots, graduates of this course can expect to be deployed anymore in the United States to support high priority investigations.

The current fielding plan dictates priorities for selection. Accordingly, slots are reserved as follows:

- [redacted]
- [redacted]
- [redacted]

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Title: (U) Unmanned Aerial System Pilot Training, 10/15/2012 through 10/19/2012, FBI Academy, Quantico.

Re: 321D-IR-A7788, 07/13/2012

Two slots will be filled by representatives of the Federal Aviation Administration and one slot will be taken by a foreign police officer pilot.

Candidates should apply through Virtual Academy by requesting access to "Unmanned Aerial System Pilot Training." This should be done as soon as possible. FFOU will review the applicants and make selections [redacted]. Candidates who are not already FBI pilots will be required to complete an FD-586 and supply photocopies of their pilot's license and medical certificate prior to selection.

Questions should be directed to SSA [redacted] of FFOU.

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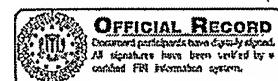
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FD-1057 (Rev. 5-8-10)

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## FEDERAL BUREAU OF INVESTIGATION

### Electronic Communication

Title: (U) Registration of [REDACTED] Participants  
to [REDACTED]  
UAS Course

Date: 08/07/2012

b7E

To: [REDACTED]

b6

b7C

b7E

From: [REDACTED]

Contact: [REDACTED]

Approved By: A/SSA [REDACTED]

Drafted By: [REDACTED]

Case ID #: 321D-IR-A7788 *127* (U) FFOU UNMANNED AIRCRAFT - FFOU  
UNMANNED AIRCRAFT

Synopsis: (U) [REDACTED] has selected SA's [REDACTED].  
[REDACTED] to participate in captioned course.

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Reference: 321D-IR-A7788 Serial 122

#### Details:

The [REDACTED] supervisor and Aviation Coordinator have designated  
SA's [REDACTED] to  
participate in captioned course during the period of  
[REDACTED] Each participant has registered in Virtual  
Academy as requested by CIRG SSA [REDACTED]

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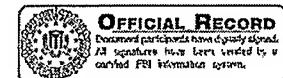
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CREW-3067

FD-1036 (Rev. 10-16-2009)

UNCLASSIFIED



# FEDERAL BUREAU OF INVESTIGATION

## Import Form

Form Type: OTHER

Date: 02/04/2013

Title: (U)  Unmanned Summary

b7E

Approved By: UC

b6  
b7C

Drafted By:

Case ID #: 321D-IR-A7788 <sup>134</sup> (U) FFOU UNMANNED AIRCRAFT - FFOU  
UNMANNED AIRCRAFT

Synopsis: (U)  Unmanned Summary

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CREW-3068

From: [REDACTED] [REDACTED] Unmanned\_Summary  
Sent: Sunday, February 03, 2013 9:46 AM  
To: [REDACTED] (IR) (FBI); [REDACTED]

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b6  
b7C

Cc: [REDACTED]  
Subject: [REDACTED] Unmanned Summary

b7E

ALCON:

FOR RECORD IR-7788 and substantive

UNCLAS and LES

Outstanding mission. [REDACTED]

b7E

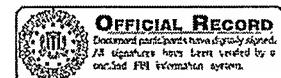
[REDACTED]  
Supervisory Special Agent Pilot  
Aviation R&D Program Manager  
(CIRG/SAS/ASU)

b6  
b7C

[REDACTED] Desk  
Mobile

FD-1057 (Rev. 5-8-10)

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**FEDERAL BUREAU OF INVESTIGATION**  
**Electronic Communication**

**Title:** (U) After Action Review of Initial UAS  
Transition School

**Date:** 03/18/2013

**To:**

b6  
b7C

**From:** CRIT INCIDENT RESPONSE  
IR-ASU  
**Contact:**

**Approved By:** UC

**Drafted By:**

**Case ID #:** 321D-IR-A7788 *145* **(U) FFOU UNMANNED AIRCRAFT - FFOU**  
UNMANNED AIRCRAFT

**LAW ENFORCEMENT SENSITIVE**

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**Synopsis:** (U) Provides lessons learned from the first FBI internal Unmanned Aerial System Transition School, held at the FBI Academy from

b7E

**Reference:** 321D-IR-A7788 Serial 142  
321D-IR-A7788 Serial 143  
321D-IR-A7788 Serial 144

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Title: (U) After Action Review of Initial UAS Transition School  
Re: 321D-IR-A7788, 03/18/2013

Enclosure(s): Enclosed are the following items:

1. (U) Scanned flight strips
2. (U) 00 - FBI Unmanned Aerial System Transition
3. (U) 01 FBI System Description and Limitations
4. (U) 02 FBI [REDACTED] Operator Interface Part 1
5. (U) 03 FBI [REDACTED] Toolbar for [REDACTED]
6. (U) 04 FBI Electronic Logbook - [REDACTED] Tracker - [REDACTED] Screener DDL
7. (U) 05 FBI Multiple UAS in Proximity
8. (U) 06 FBI [REDACTED] In Flight Intel Techniques
9. (U) 07 FBI Emergency Procedures
10. (U) 08 FBI Law Enforcement Mission Planning
11. (U) 09 FBI Thursday and Friday range restrictions

b7E

Details:

From [REDACTED] the investigating Agent and Electronics Technician [REDACTED] of Operational Technology Division's Video Surveillance Unit held the FBI's first internal unmanned aerial system ("UAS") transition school. The course was held at the FBI Academy and was listed in Virtual Academy as *Unmanned Aerial System Pilot Training* [REDACTED] This communication describes the training and provides lessons learned that will be applicable to future iterations of the course. It is also intended to serve as a guide to preparing the next evolution.

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Student Selection

Students were selected by the Field Flight Operations Unit ("FFOU") based on expected operational employment of UAS. [REDACTED] pilots were chosen from the National Surveillance Response Unit ("NSRU"). [REDACTED] were Special Agent Pilots in Command and [REDACTED] was an instrument rated Investigative Specialist Aerial Copilot. In addition, the incoming FFOU program manager for UAS operations attended the training. An additional ISA from FFOU and a pilot from the Hostage Rescue Team ("HRT") attended and participated.

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Facilities

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Title: (U) After Action Review of Initial UAS Transition School  
Re: 321D-IR-A7788, 03/18/2013

[redacted] of the Training Division authorized the use of a classroom [redacted] at the FBI Academy. Staff from the Tactical Emergency Vehicle Operations Course ("TEVOC") authorized the use of the TEVOC control tower as a base for flight operations. Marine Corps Base Quantico's Range Control approved the flight operations and assigned training areas and range restrictions throughout the week. See the referenced Serials for coordinating information provided by Range Control.

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**Curriculum**

The curriculum for the course was based on the manufacturer created PowerPoint slides originally developed for [redacted]

b7E

[redacted] Irrelevant material, such as artillery adjustment procedures, was deleted. The slides actually used are included as attachments to this document. The course was a mixture of lecture, practical exercises in the classroom, and actual flying. Each student's training packet included after action reviews of previous FBI UAS operations, examples of Certificates of Authorization for UAS flights, and the FAA's Interim Operational Approval Guidance 08-01.

Each student was also provided with a sectional chart, small field notebook, pens, and a chemical light for night safety.

The classroom syllabus contained the following modules:

1. FBI Unmanned Aerial System Transition (introduction)
2. System Description and Limitations
3. [redacted] Operator Interface
4. [redacted] Toolbar for [redacted]

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UNCLASSIFIED

Title: (U) After Action Review of Initial UAS Transition School  
Re: 321D-IR-A7788, 03/18/2013

5. Electronic Logbook,  Tracker,  Screener
6. Multiple UAS in close proximity
7. In Flight Intelligence Techniques
8. Emergency Procedures
9. Law Enforcement Mission Planning

b7E

The flight syllabus contained the following training missions:

- Flight 1 - Basic Flight Operations
- Flight 2 - Intelligence Gathering Techniques
- Flight 3 - Emergency Procedures
- Flight 4 - Night Operations
- Flight 5 - Beyond line of site and handoff operations
- Flight 6 - Checkride

Each crew performed each flight twice so that each participant received a chance to perform both vehicle operator and mission operator duties. Each student also studied and presented one of the after action reviews. Flight 6, the checkride, constituted the final examination.

**Flight Records**

All flights were entered into Bureau Aircraft Operations. The actual paper flight records were also scanned and attached to this document. Flight hours by air vehicle and date are shown below:

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Title: (U) After Action Review of Initial UAS Transition School  
Re: 321D-IR-A7788, 03/18/2013



b7E

See BAO for more information about individual flights. Most flight records contained more than one takeoff and landing. Total time in the air was [redacted]. Due to the nature of UAS training, very little time is actually spent in the air as simply flying the air vehicle has little training benefit. Most learning occurs during system setup, mission planning, launch, and recovery.

b7E

**Incidents**

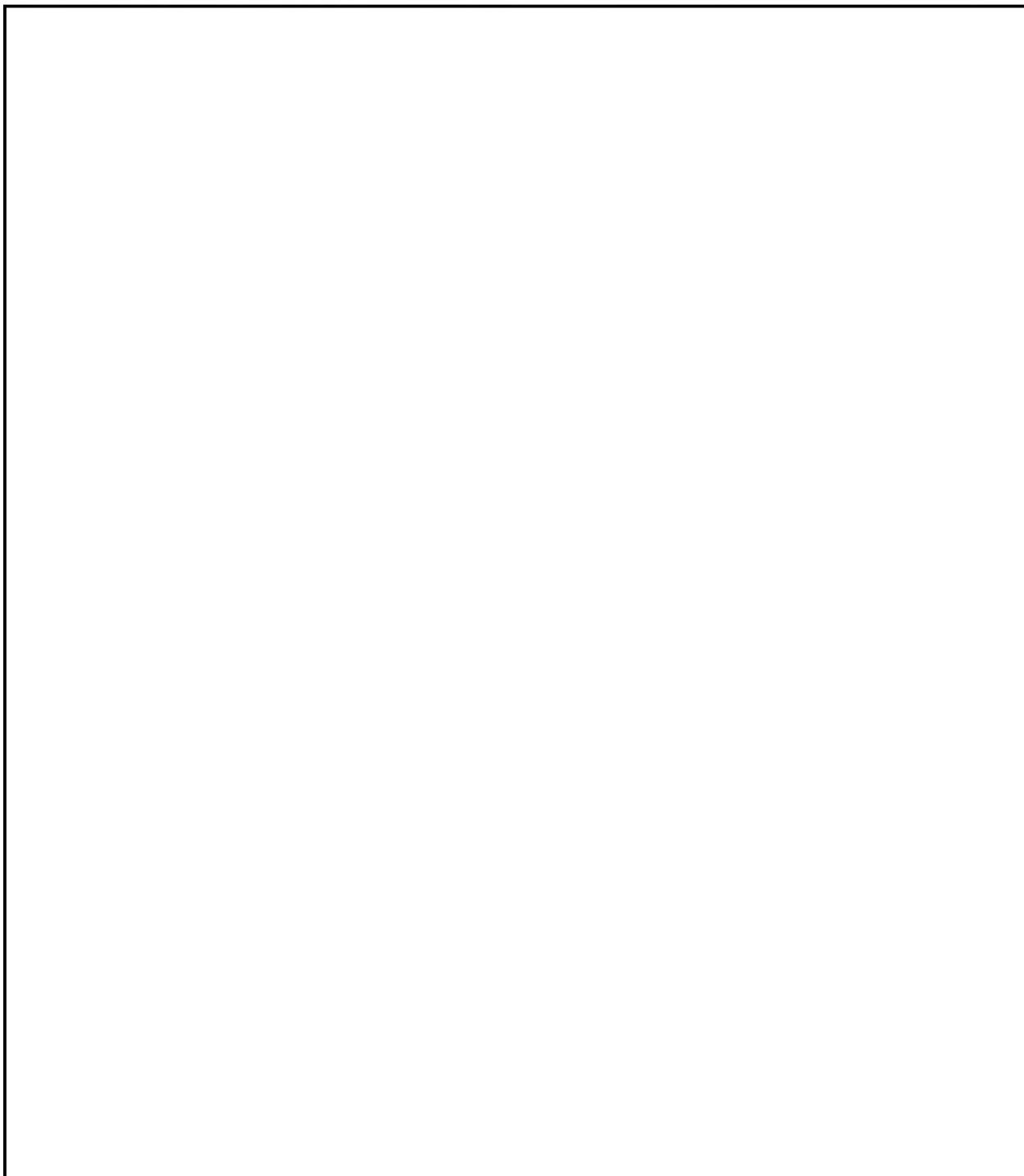


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**UNCLASSIFIED**

Title: (U) After Action Review of Initial UAS Transition School  
Re: 321D-IR-A7788, 03/18/2013



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**UNCLASSIFIED**

Title: (U) After Action Review of Initial UAS Transition School  
Re: 321D-IR-A7788, 03/18/2013



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b7E

**Certification**

**UNCLASSIFIED**

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Title: (U) After Action Review of Initial UAS Transition School  
Re: 321D-IR-A7788, 03/18/2013

Each graduate received the following logbook endorsement:

I certify that \_\_\_\_\_, holder of \_\_\_\_\_ certificate \_\_\_\_\_, has fulfilled the training requirements of FAA Interim Operational Approval Guidance 08-01, March 13, 2008, § 9.1.1.4, requiring that Unmanned Aerial System ("UAS") pilots who are also rated pilots have additional training in all specific details of the UAS being operated including normal, abnormal, and emergency procedures. This included manufacturer specific training, demonstrated proficiency, and testing in the UAS being operated. He has received the FBI required training and demonstrated the required proficiency in the operation of the

[REDACTED] He is approved to act as an FBI Pilot in Command in said UAS in the following land based operations: day, night, instrument conditions, and beyond visual range consistent with system and regulatory limitations. Single pilot, mobile ground station, and maritime operations are prohibited. This certification is applicable only to FBI public use operations and does not confer privileges for any civil aircraft operation.

b7E

The endorsement was recorded as training in BAO and uploaded to each airman's record in BAO.

**Lessons Learned**

The class brought forth the following lessons learned:

1. Limit class to only four students - a ratio of two instructors to two students is ideal. Without four students, handoffs can not be practiced but more than four students creates too much idle time.

2. Limit class to only one airframe. Initially, [REDACTED] differences was to be included in the curriculum but did not allow for it. [REDACTED] differences and amphibious operations should be add on courses.

b7E

3. Some students were hampered by weak computer skills. In addition to

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**UNCLASSIFIED**

Title: (U) After Action Review of Initial UAS Transition School  
Re: 321D-IR-A7788, 03/18/2013

pilot ratings and surveillance experience, students need strong Windows based computer literacy. Strong computer skills should be made a prerequisite for future students.

**Conclusion**

The conduct of this class validated the ability of FBI personnel to conduct inhouse UAS transition training and resulted in substantial cost savings over vendor provided training. The facilities at Quantico proved entirely adequate. It is recommended that additional UAS pilots be trained as resources permit.

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**UNCLASSIFIED**

## BUREAU FLIGHT STRIP

FLOWN BY DIVISION: IR BENEFITTING DIVISION: IR PURPOSE\*: Surv FILE#: 3210-IR - A7788

GROUND TEAM:  AGENT  SUPPORT AIRCRAFT:  DATE:  HOBBS:

b7E

FLIGHT HOURS:  FLIR HOURS:  RISK ASSESSMENT SCORE:

ROUTE:

STOP: X  
START: X  
TOTAL: X

CREW:

CREW	FLIGHT HOURS	PIC	SIC	TNG	NIGHT	ACT INST	SIM INST	DAY T/O	DAY LDG	NGT T/O	NGT LDG	INST APR	HOLD PROC

PASSENGERS:

FIRST NAME	MIDDLE NAME	LAST NAME	COMMENTS	EMPLOYEE? (Y/N)
<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>

COMMENTS:

<i>Demo for transition class</i>

PURPOSE:

CC: Command and Control	MX: Maintenance/Test Flight	TO: Tactical Operations	TR-NE: Transport – Non-Executive
CR: Communications Relay	PH: Photography	TN: Training/Proficiency/Evaluation	UO: Undercover Operations
ME: Medical Evacuation	SV: Surveillance	TR-E: Transport - Executive	

BAO#

FUEL: Gallons/ \$

*BPC*

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b7C  
b7E

CREW-3079

## BUREAU FLIGHT STRIP

FLOWN BY DIVISION: IR BENEFITTING DIVISION: IR PURPOSE\*: Surv FILE#: 321D-IR - A7788

GROUND TEAM:  AGENT  SUPPORT

AIRCRAFT:           

DATE:           

HOBBS:

b7E

FLIGHT HOURS:           

FLIR HOURS:           

RISK ASSESSMENT SCORE: N/A

STOP:           

ROUTE:           

START:           

TOTAL:           

CREW:

CREW	FLIGHT HOURS	PIC	SIC	TNG	NIGHT	ACT INST	SIM INST	DAY T/O	DAY LDG	NGT T/O	NGT LDG	INST APR	HOLD PROC

PASSENGERS:

FIRST NAME	MIDDLE NAME	LAST NAME	COMMENTS	EMPLOYEE? (Y/N)

COMMENTS:


PURPOSE:

CC: Command and Control	MX: Maintenance/Test Flight	TO: Tactical Operations	TR-NE: Transport – Non-Executive
CR: Communications Relay	PH: Photography	TN: Training/Proficiency/Evaluation	UO: Undercover Operations
ME: Medical Evacuation	SV: Surveillance	TR-E: Transport - Executive	

BAO#

--

FUEL:            Gallons/ \$           

b6  
b7C  
b7E

CREW-3080

## BUREAU FLIGHT STRIP

FLOWN BY DIVISION: IR BENEFITTING DIVISION: IR PURPOSE\*: SURV FILE#: 321A-IR - A7788

GROUND TEAM:  AGENT  SUPPORT

AIRCRAFT:           

DATE:           

HOBBS:

b7E

FLIGHT HOURS:           

FLIR HOURS: N/A

RISK ASSESSMENT SCORE: N/A

STOP:           

ROUTE:           

START:           

TOTAL:           

### CREW:

CREW	FLIGHT HOURS	PIC	SIC	TNG	NIGHT	ACT INST	SIM INST	DAY T/O	DAY LDG	NGT T/O	NGT LDG	INST APR	HOLD PROC

### PASSENGERS:

FIRST NAME	MIDDLE NAME	LAST NAME	COMMENTS	EMPLOYEE? (Y/N)
<u>          </u>				

### COMMENTS:

<u>          </u>	<u>          </u>	<u>          </u>
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### PURPOSE:

CC: Command and Control	MX: Maintenance/Test Flight	TO: Tactical Operations	TR-NE: Transport – Non-Executive
CR: Communications Relay	PH: Photography	TN: Training/Proficiency/Evaluation	UO: Undercover Operations
ME: Medical Evacuation	SV: Surveillance	TR-E: Transport - Executive	

BAO#

<u>          </u>
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FUEL:            Gallons/ \$           

b6

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CREW-3081





## BUREAU FLIGHT STRIP

FLOWN BY DIVISION: IR BENEFITTING DIVISION: IR PURPOSE\*: SURV FILE#: 321D-IR - A7788

GROUND TEAM:  AGENT

SUPPORT

AIRCRAFT:

DATE:

HOBBS:

FLIGHT HOURS:

FLIR HOURS:

RISK ASSESSMENT SCORE:

STOP:   
START:   
TOTAL:

ROUTE:

### CREW:

CREW	FLIGHT HOURS	PIC	SIC	TNG	NIGHT	ACT INST	SIM INST	DAY T/O	DAY LDG	NGT T/O	NGT LDG	INST APR	HOLD PROC
<input type="text"/>													

### PASSENGERS:

FIRST NAME	MIDDLE NAME	LAST NAME	COMMENTS	EMPLOYEE? (Y/N)
<input type="text"/>				

### COMMENTS:

<u>PIC INITIAL CHECKLIST FOR BOTH CREWMEMBERS</u>
<input type="text"/>

### PURPOSE:

CC: Command and Control	MX: Maintenance/Test Flight	TO: Tactical Operations	TR-NE: Transport – Non-Executive
CR: Communications Relay	PH: Photography	TN: Training/Proficiency/Evaluation	UO: Undercover Operations
ME: Medical Evacuation	SV: Surveillance	TR-E: Transport - Executive	<input type="text"/>

BAO#

FUEL:  Gallons/ \$

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b7E

CREW-3084

## BUREAU FLIGHT STRIP

FLOWN BY DIVISION: IR BENEFITTING DIVISION: IR PURPOSE\*: Surv FILE#: 3210-IR - A7788  
GROUND TEAM:  AGENT  SUPPORT AIRCRAFT:   DATE:   b7E  
FLIGHT HOURS   FLIR HOURS:   RISK ASSESSMENT SCORE:    
ROUTE:   HOBBS:    
STOP:    
START:    
TOTAL:  

CREW:

CREW	FLIGHT HOURS	PIC	SIC	TNG	NIGHT	ACT INST	SIM INST	DAY T/O	DAY LDG	NGT T/O	NGT LDG	INST APR	HOLD PROC

PASSENGERS:

FIRST NAME	MIDDLE NAME	LAST NAME	COMMENTS	EMPLOYEE? (Y/N)
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

COMMENTS:


PURPOSE:

CC: Command and Control	MX: Maintenance/Test Flight	TO: Tactical Operations	TR-NE: Transport – Non-Executive
CR: Communications Relay	PH: Photography	TN: Training/Proficiency/Evaluation	UO: Undercover Operations
ME: Medical Evacuation	SV: Surveillance	TR-E: Transport - Executive	

BAO#

FUEL:   Gallons/ \$  

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b7C  
b7E

CREW-3085

## BUREAU FLIGHT STRIP

FLOWN BY DIVISION: IR BENEFITTING DIVISION: IR PURPOSE\*: Surv FILE#: 3210-IR - A7788

GROUND TEAM:  AGENT  SUPPORT

AIRCRAFT:   

DATE:   

HOBBS:

FLIGHT HOURS:   

FLIR HOURS:   

RISK ASSESSMENT SCORE:   

STOP:   

ROUTE:   

START:   

TOTAL:   

b7E

CREW:

CREW	FLIGHT HOURS	PIC	SIC	TNG	NIGHT	ACT INST	SIM INST	DAY T/O	DAY IDG	NGT T/O	NGT IDG	INST APR	HOLD PROC

PASSENGERS:

FIRST NAME	MIDDLE NAME	LAST NAME	COMMENTS	EMPLOYEE? (Y/N)
<u>  </u>	<u>  </u>	<u>  </u>	<u>  </u>	<u>  </u>

COMMENTS:


PURPOSE:

CC: Command and Control	MX: Maintenance/Test Flight	TO: Tactical Operations	TR-NE: Transport – Non-Executive
CR: Communications Relay	PH: Photography	TN: Training/Proficiency/Evaluation	UO: Undercover Operations
ME: Medical Evacuation	SV: Surveillance	TR-E: Transport - Executive	

BAO#

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FUEL:    Gallons/ \$   

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CREW-3086

## BUREAU FLIGHT STRIP

FLOWN BY DIVISION: IR BENEFITTING DIVISION: IR PURPOSE\*: Surv FILE#: 321D-IR - A7788

GROUND TEAM:  AGENT

SUPPORT

AIRCRAFT:  DATE:

HOBBS:

FLIGHT HOURS:

FLIR HOURS:

RISK ASSESSMENT SCORE:

STOP:

ROUTE:

START:

TOTAL:

b7E

### CREW:

CREW	FLIGHT HOURS	PIC	SIC	TNG	NIGHT	ACT INST	SIM INST	DAY T/O	DAY LDG	NGT T/O	NGT LDG	INST APR	HOLD PROC

### PASSENGERS:

FIRST NAME	MIDDLE NAME	LAST NAME	COMMENTS	EMPLOYEE? (Y/N)

### COMMENTS:


### PURPOSE:

CC: Command and Control	MX: Maintenance/Test Flight	TO: Tactical Operations	TR-NE: Transport – Non-Executive
CR: Communications Relay	PH: Photography	<input checked="" type="checkbox"/> TN: Training/Proficiency/Evaluation	UO: Undercover Operations
ME: Medical Evacuation	SV: Surveillance	TR-E: Transport - Executive	

BAO#

FUEL:  Gallons/ \$

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CREW-3087

## BUREAU FLIGHT STRIP

FLOWN BY DIVISION: IR BENEFITTING DIVISION: IR PURPOSE\*: Surv FILE#: 321D-IR - A7788

GROUND TEAM:  AGENT

SUPPORT

AIRCRAFT:

DATE:

HOBBS:

FLIGHT HOURS:

FLIR HOURS:

RISK ASSESSMENT SCORE:

STOP:

ROUTE:

START:

TOTAL:

### CREW:

CREW	FLIGHT HOURS	PIC	SIC	TNG	NIGHT	ACT INST	SIM INST	DAY T/O	DAY LDG	NGT T/O	NGT LDG	INST APR	HOLD PROC

### PASSENGERS:

FIRST NAME	MIDDLE NAME	LAST NAME	COMMENTS	EMPLOYEE? (Y/N)

### COMMENTS:


### PURPOSE:

CC: Command and Control	MX: Maintenance/Test Flight	TO: Tactical Operations	TR-NE: Transport – Non-Executive
CR: Communications Relay	PH: Photography	TN: Training/Proficiency/Evaluation	UO: Undercover Operations
ME: Medical Evacuation	SV: Surveillance	TR-E: Transport - Executive	

BAO#

FUEL:

Gallons/ \$

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b7E

CREW-3088

## BUREAU FLIGHT STRIP

FLOWN BY DIVISION: IR BENEFITTING DIVISION: IR PURPOSE\*: Surv FILE#: 321D. IR - A7788

GROUND TEAM:  AGENT  SUPPORT

AIRCRAFT:                   

DATE:                   

HOBBS:

FLIGHT HOURS:           

FLIR HOURS:           

RISK ASSESSMENT SCORE:                   

STOP:                   

ROUTE:                   

START:                   

TOTAL:                   

CREW:

CREW	FLIGHT HOURS	PIC	SIC	TNG	NIGHT	ACT INST	SIM INST	DAY T/O	DAY LDG	NGT T/O	NGT LDG	INST APR	HOLD PROC

PASSENGERS:

FIRST NAME	MIDDLE NAME	LAST NAME	COMMENTS	EMPLOYEE? (Y/N)
<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>

COMMENTS:


PURPOSE:

CC: Command and Control	MX: Maintenance/Test Flight	TO: Tactical Operations	TR-NE: Transport – Non-Executive
CR: Communications Relay	PH: Photography	TN: Training/Proficiency/Evaluation	UO: Undercover Operations
ME: Medical Evacuation	SV: Surveillance	TR-E: Transport - Executive	

BAO#

--

FUEL:                    Gallons/ \$                   

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CREW-3089

## BUREAU FLIGHT STRIP

FLOWN BY DIVISION: IR BENEFITTING DIVISION: IR PURPOSE\*: SURV FILE#: 321A-IR - A7788

GROUND TEAM:  AGENT

SUPPORT

AIRCRAFT:           

DATE:           

HOBBS:

b7E

FLIGHT HOURS:           

FLIR HOURS:           

RISK ASSESSMENT SCORE:           

STOP:           

ROUTE:           

START:           

TOTAL:           

CREW:

CREW	FLIGHT HOURS	PIC	SIC	TNG	NIGHT	ACT INST	SIM INST	DAY T/O	DAY LDG	NGT T/O	NGT LDG	INST APR	HOLD PROC
<u>          </u>													
<u>          </u>													
<u>          </u>													
<u>          </u>													

PASSENGERS:

FIRST NAME	MIDDLE NAME	LAST NAME	COMMENTS	EMPLOYEE? (Y/N)
<u>          </u>				
<u>          </u>				

COMMENTS:

PURPOSE:

CC: Command and Control	MX: Maintenance/Test Flight	TO: Tactical Operations	TR-NE: Transport – Non-Executive
CR: Communications Relay	PH: Photography	TN: Training/Proficiency/Evaluation	UO: Undercover Operations
ME: Medical Evacuation	SV: Surveillance	TR-E: Transport - Executive	

BAO#

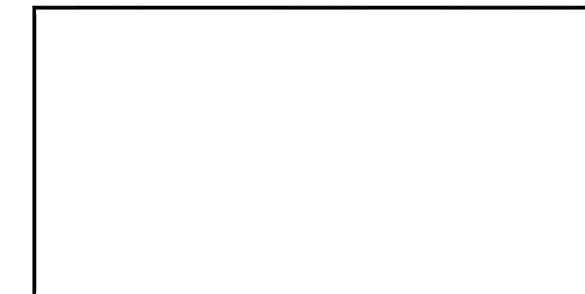
FUEL:            Gallons/ \$           

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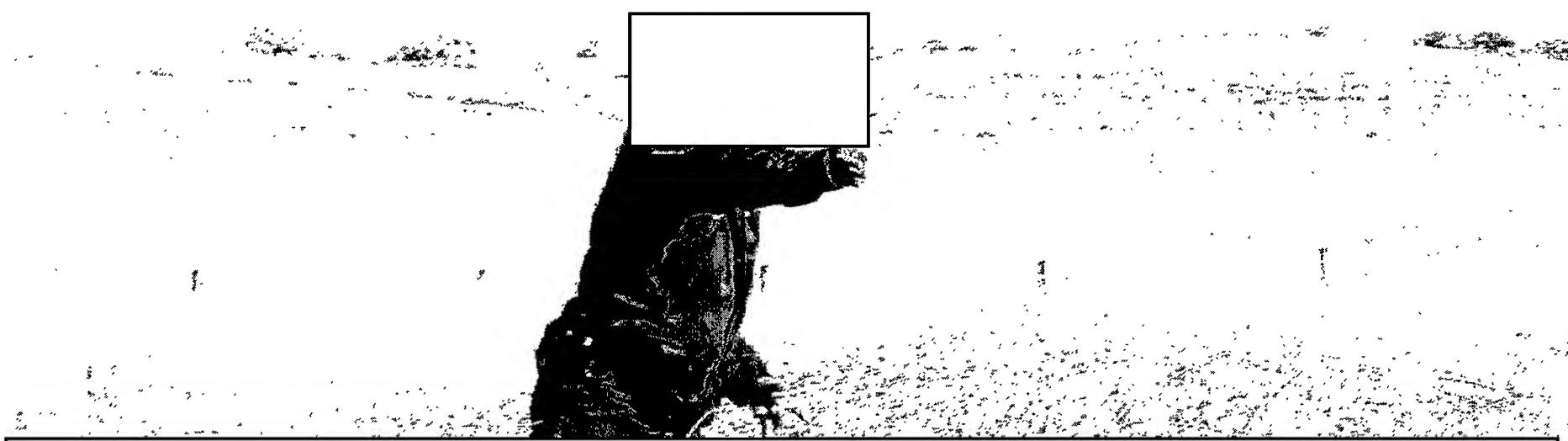
CREW-3090



CREW-3091



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Course

KCREW-3092



# UNCLASSIFIED

## LAW ENFORCEMENT SENSITIVE

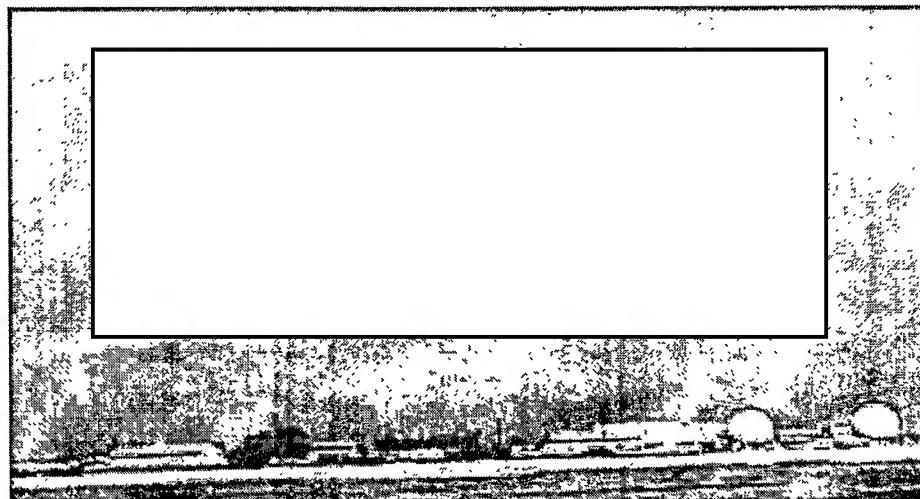
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CREW-3093



# Course Introduction



b7E

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CREW-3094



# Special Thanks To:

March 2013

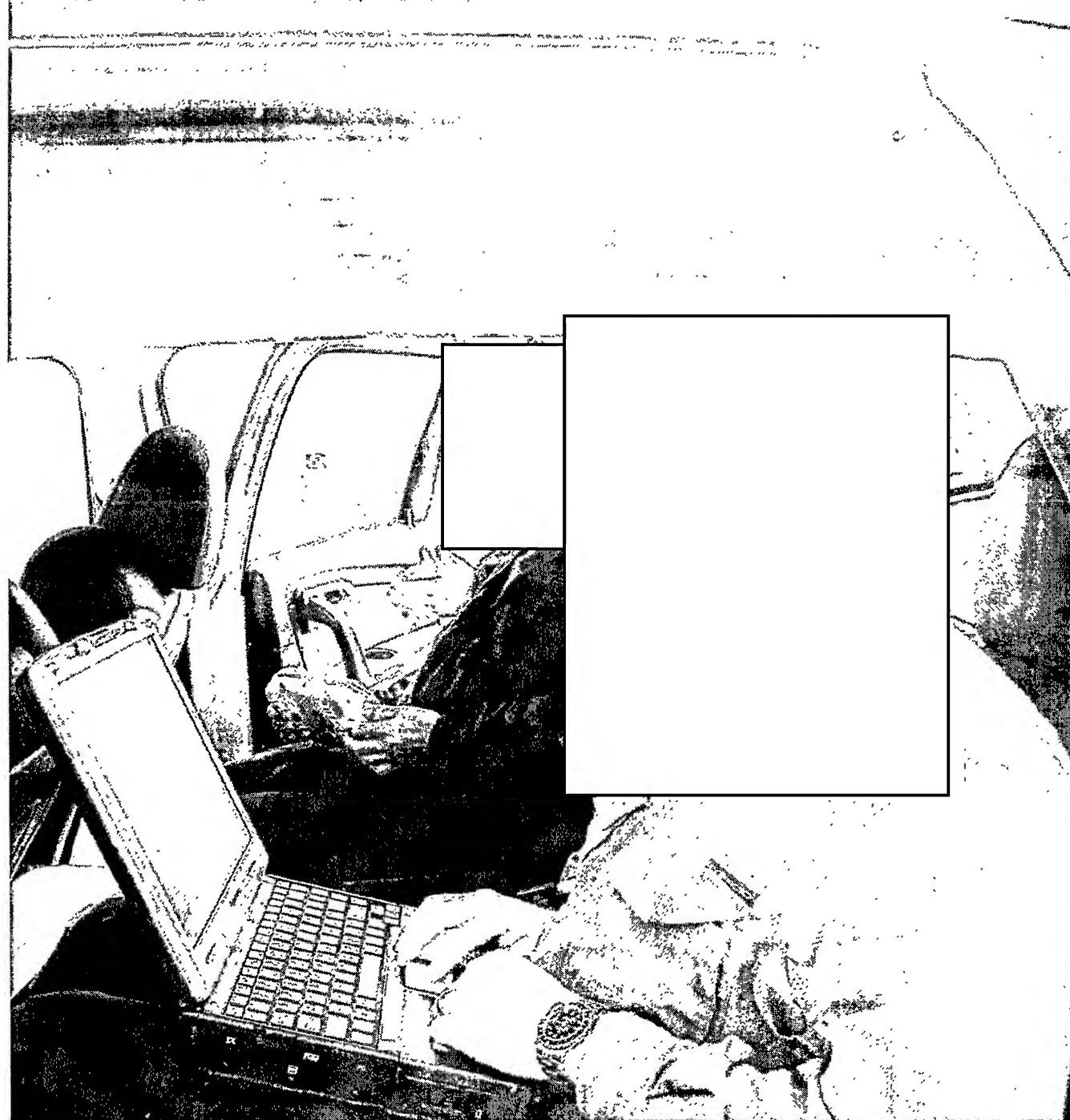
UNCLAS / LES

CREW-3095

# Interim Operational Approval Guidance 08-01



## Unmanned Aircraft Systems Operations in the U. S. National Airspace System



March 2013

b6  
b7c

CREW-3100



# COA / ECOA & Airspace Planning



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# Prerequisites

- FBI Special Agent Pilot or Investigative Specialist Aerial
- FAA Private, Commercial, or ATP
- FAA Instrument Rating
- FAA Class 2 Medical



# Pilot License Required

- Class A, C, D, and E airspace.
- IFR (FAA instrument rating required).
- Night.
- Joint use or public airfields.
- Beyond line of sight.
- At any time the FAA has determined the need based on the UAS' characteristics, mission profile, or other operational parameters

See FAA Interim Operational Approval Guidance 08-01



# Prerequisites drive assumptions.

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# Aeronautical Knowledge:

- Aircraft structures
- Principles of flight
- Aerodynamics of flight
- Flight controls
- Aircraft systems
- Flight instruments
- Aircraft Performance
- Weather theory
- Aviation Wx Services
- Airspace
- Navigation
- Aeromedical Factors
- Aeronautical Decision making



# Investigative Knowledge

- DIOG
- BAR
- ELSUR
- [REDACTED]
- FBI encrypted radios [REDACTED]
- Downlink theory
- Thermal Imaging, [REDACTED] Cameras, Lasers
- Goals of physical surveillance
- Tactical operations [REDACTED]
- FBI Deadly Force Policy

b7E

b7E

b7E

b7E



Because you know this:  
This course is half  
the length of the  
military course



# Deleted from the Military Course

- Artillery adjustment
- Multiple UAS operations
- Relay operations
- Encrypted GPS
- Military maintenance procedures
- Simulator
- Chat between ground stations
- Mobile Ops

b7E



## Course Introduction



b6  
b7c

- Schedule
- Facilities
- Medical / Safety
- Transportation
- Meals
- Water
- Communications
- Operator manual
- Student handouts
- Operator Checklist



# Record Keeping

- Enter flight times in your personal logbook.
- BAO will be entered for you during the course.
  - Flights
  - Training



# Graduation Requirements

- All tests are performance based
- Memorize
  - Limitations
  - Emergency Procedures
- All else is open book / open checklist



b7E

# Manuals

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CREW-3115



# Table Of Contents



b7E

- 1.  System Description
  - System Limitations
  - 
  - 
  - Batteries and Chargers
  - Field Repair Kit
  - System Sustainment



# Table Of Contents

## ■ 2. System Assembly and Disassembly

- Assembly
- Assembly
- Disassembly
- Disassembly
- Universal Battery Charging (UBC) Procedure

b7E



# Table Of Contents

## ■ 3. Operator Interface

- Controller Functions
- Hand Controller Buttons
- Displays
- Warning Displays

b7E



# Table Of Contents

## ■ 4. Software Tools

- [Redacted]
- Electronic Logbook
- Tracker and  Screener
- Range and Bearing Tool
- Still Capture Tool

b7E



# Table Of Contents

- 5. Basic Flight Operations
  - Pre-flight Procedures
  - Launch
  - Flying the Mission
  - Landing, Recovery and Inspection
  - Post-flight Procedures



# Table Of Contents

## ■ 6. Mission Planning and Airspace Management

- Basic Mission Planning
- GPS Degradation or Failure



# Table Of Contents

- 7. Advanced Operations
  - Handoff Procedures



# Table Of Contents

## ■ 9. Inspections, Troubleshooting & Operator Maintenance

- Field repair Kit (FRK)
- Troubleshooting
- Operator Maintenance
- Maintenance

b7E



# Table Of Contents

## ■ 10. Emergency Procedures

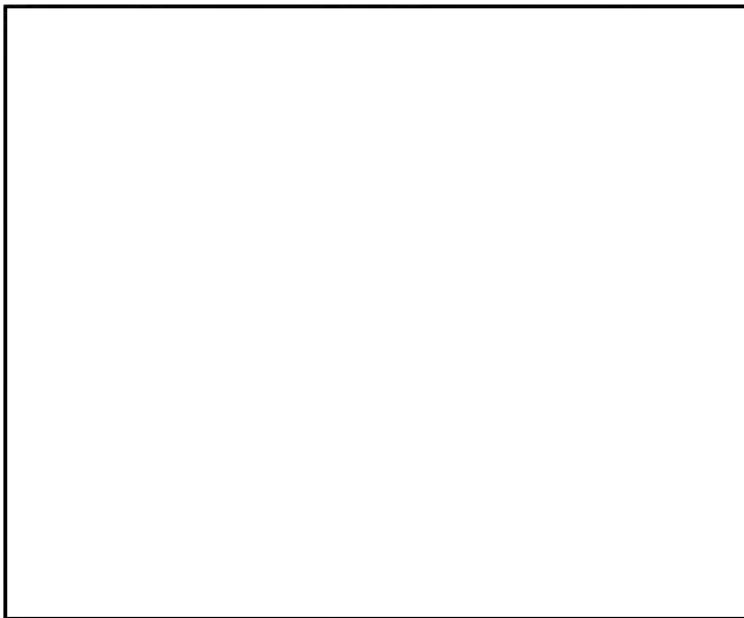
- Loss of Link
- GPS Failure
- Structural or Flight Control Failure
- Extreme Low Air Vehicle Battery
- Propulsion Failure





# Table Of Contents

## ■ 10. Emergency Procedures cont.



b7E



# Range Briefing

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# UAS Frequencies

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CREW-3128



b7E

# Range Restrictions

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CREW-3130

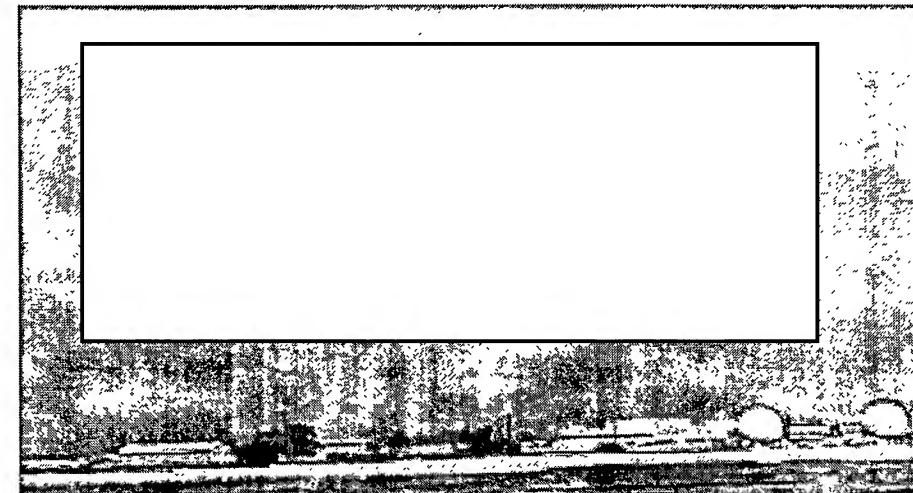


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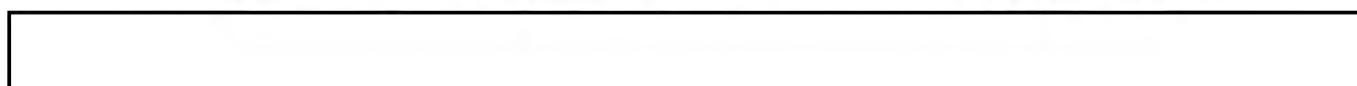
# Operator

# Interface

# Part 1



b7E



b7E

(07/08/11)

CREW<sup>1</sup> 3136 b7E



# Hand Controller Buttons

[Redacted] (07/08/11)

b7E

CREW<sup>3</sup>-3138



# Displays



07/08/11)

b7E

12  
CREW-3147



# Toolbar Buttons

b7E



(07/08/11)

b7E

13 CREW-3193



# Adjusting your terms:

Manned v. Unmanned

[Redacted box]

(07/08/11)

b7E

15 CREW 3195



Why did they have to be  
this stupid!!!!

NITF Images



(07/08/11)

b7E

43 CREW 3223



# C:\RPUAV\_Logs

This is really important!!!



(07/08/11)

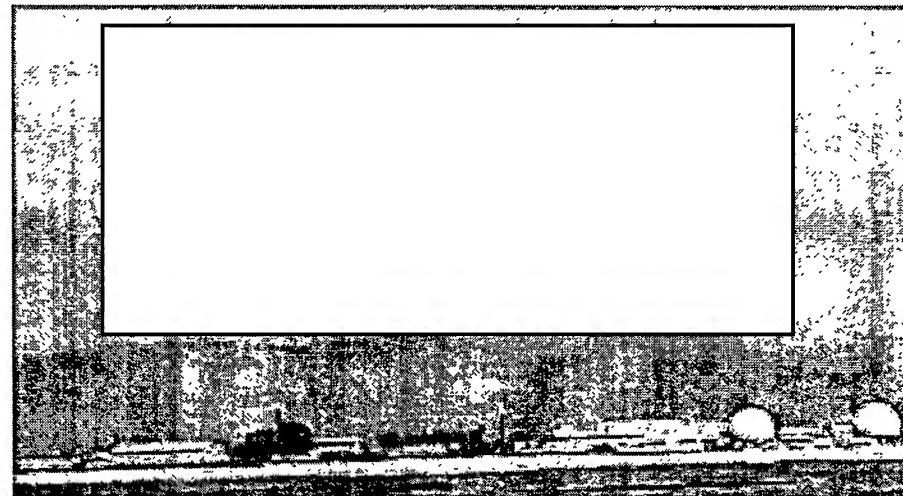
b7E

14 CREW-3224



# Electronic Logbook

Tracker  
 Screener DDL



(07/08/11)

1 b7E  
CREW-3242

b7E

b7E

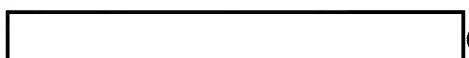
b7E

b7E



# Tracker

b7E



(07/08/11)

b7E

13 CREW 3254 b7E



b7E

# [Redacted] Screener DDL Live/Full

b7E

[Redacted]

[Redacted] (07/08/11)

35 b7E  
CREW-3276



# Multiple SUAS Operations

[Redacted] (07/08/11)

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CREW<sup>1</sup>-3288



# Still Capture Tool

## Chapter 4

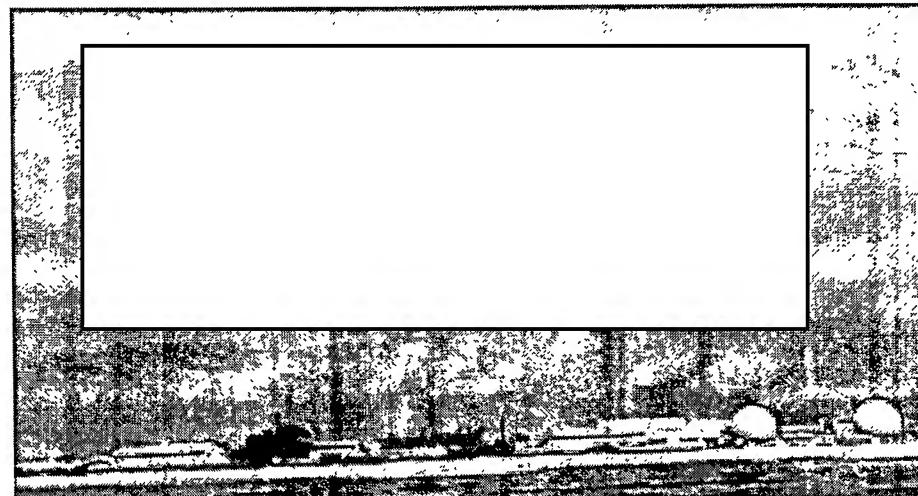
(07/08/11)

b7E

CREW<sup>1</sup>3298 b7E



# Range and Bearing Tool



b7E



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[Redacted] (07/08/11)

12 CREW-3309 b7E



# Summary

+



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29  
CREW-3326



# Questions?

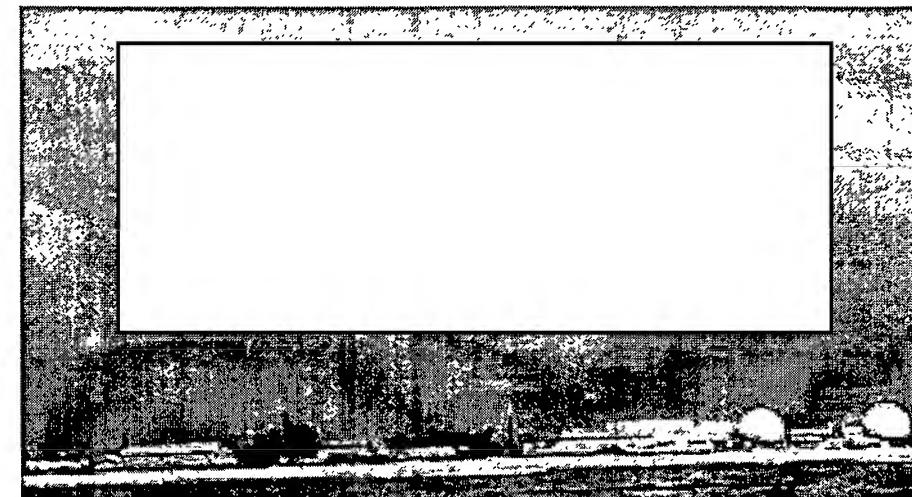


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30  
CREW-3327



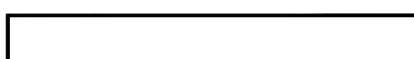
# EMERGENCY PROCEDURES



b7E



b7E



(07/08/11)

1  
b7E  
CREW-3331



# FBI Mission Planning

CREW-3363

b6  
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b7E



1776



# Declaration of Independence Articles of Confederation

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CREW-3364



1798



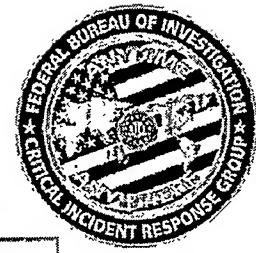
# United States Constitution



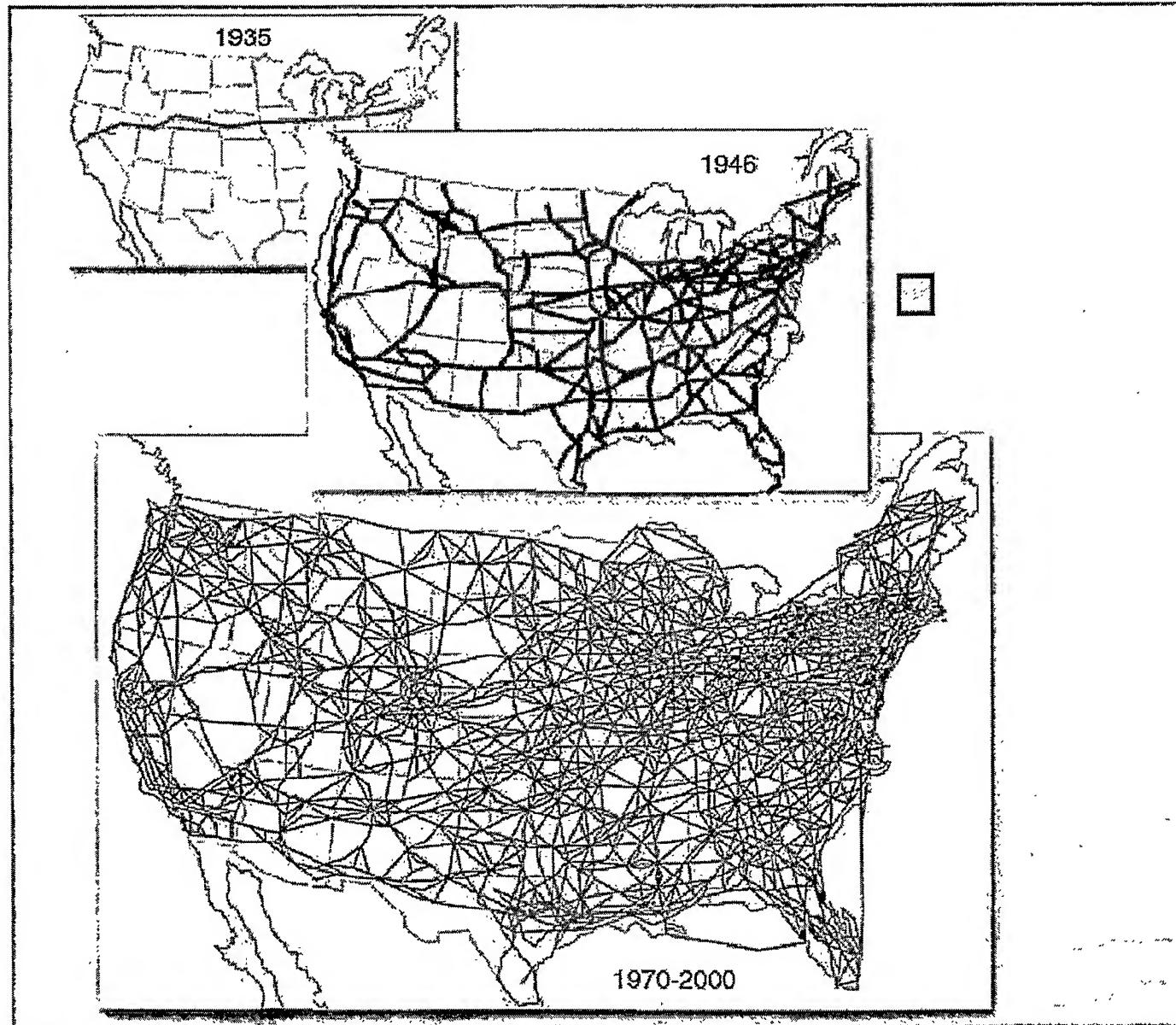
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b7E

CREW-3365



# National Airspace System



March 2013

CREW-3366



# What motivates the FAA?

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CREW-3367



## 14 CFR § 91.113(b)

“Vigilance must be maintained by each person operating an aircraft so as to see and avoid other aircraft.”



# Shared Fate?

- Manned Aircraft
- Unmanned Aircraft



# Mitigating the See & Avoid Requirement

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# How many terrorists, spies, & criminals live in restricted and warning areas?

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# Interim Operational Approval Guidance 08-01



## Unmanned Aircraft Systems Operations in the U. S. National Airspace System



# COA

## Certificate of Waiver or Authorization (in the FAA's own words)

March 2013

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CREW-3375



**COA is an authorization issued by  
the Air Traffic Organization to a  
public operator for a specific UA  
activity.**



**After a complete application is submitted, FAA conducts a comprehensive operational and technical review.**



**If necessary, provisions or limitations may be imposed as part of the approval to ensure the UA can operate safely with other airspace users.**



In most cases, FAA will provide a formal response within  days from the time a completed application is submitted.

b7E



# COA online provides a simple 22 page form

March 2013

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CREW-3380



# Safety of Life Emergency COA

March 2013

UNCLAS / LES

CREW-3381



# COA available only if...

- 
- 
- 
- 
- 
- 
- 
- 

b7E

March 2013

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CREW-3382



**Training flights may be conducted  
in restricted areas in accordance  
with range rules.**

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CREW-3383



# Flights in the National Airspace System Require FAA Authorization

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CREW-3384



**COA is an authorization issued by the Air Traffic Organization to a public operator for a specific UA activity. After a complete application is submitted, FAA conducts a comprehensive operational and technical review. If necessary, provisions or limitations may be imposed as part of the approval to ensure the UA can operate safely with other airspace users. In most cases, FAA will provide a formal response within 60 days from the time a completed application is submitted.**



# ECOA

## Emergency Certificate of Authorization or Waiver

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CREW-3386



# Surveillance request:

b7E

March 2013

UNCLAS / LES

CREW-3387



# Initial analysis

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- Suitable [Redacted] location (safety / publicity)
- Class of airspace?
- Airports, Military Training Routes, borders, etc.
- Time [Redacted] days for routine COA)

b7E



# Airspace

[REDACTED]

[REDACTED]

b7E

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CREW-3389



# HQ Involvement

- If initial analysis is go, contact FFOU PM.
- FFOU PM will refer to UAS PM (Homenik)
- UAS PM will be the only point of contact with the FAA.



# COA Requirements

- Airworthiness Statement
- Lost Link Procedures
- Observers w/ 2<sup>nd</sup> Class Medical w/in 1 nm
- ATC communications
- Internal communications
- Night operations? Lighting?
- Pilot qualifications



b7E

What if I don't have  days?

ECOA

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CREW-3394



# ECOA

- Comply with all COA requirements
- Based on an existing COA
- Safety of life justification
- Inability to use manned aircraft
- Letter signed by Section Chief or Higher

January 31, 2013

Federal Aviation Administration  
800 Independence Ave  
Washington, DC 20591

Attention: [redacted]

b6  
b7C

RE: Emergency COA [redacted]

b7E

Dear Ms. [redacted]

b6  
b7C

The Federal Bureau of Investigation ("FBI") requests an emergency authorization ("ECOA") due to exigent circumstances. [redacted]

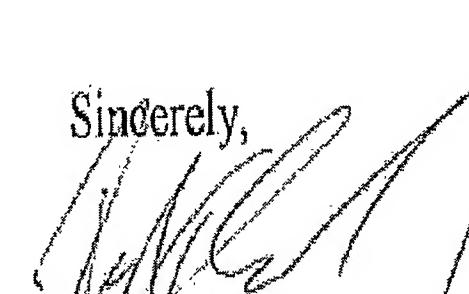
b3  
b7E

The incident commander for aviation is the writer. He can be reached via mobile telephone at [REDACTED] and via Blackberry e-mail at [REDACTED] He will also be the mission pilot in command. [REDACTED]

[REDACTED] Operations will be conducted [REDACTED] Pilot and observer qualifications are unchanged from the COA. The area is unpopulated. Lost link procedures are per the COA. [REDACTED] is requested.

Sincerely,

Richard Thornton  
Section Chief  
Federal Bureau of  
Investigation

  
A handwritten signature in black ink, appearing to read "Richard Thornton".



# ECOA is issued

March 2013

UNCLAS / LES

CREW-3398



# UNCLASSIFIED

## LAW ENFORCEMENT SENSITIVE

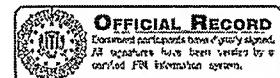
March 2013

UNCLAS / LES

CREW-3400

FD-1036 (Rev. 10-16-2009)

UNCLASSIFIED//FOUO



# FEDERAL BUREAU OF INVESTIGATION

## Import Form

Form Type: OTHER

Date: 08/22/2013

Title: (U//FOUO) FAA Notice for UAS Operational Approval

Approved By:

b6  
b7c

Drafted By:

Case ID #: 321D-IR-A7788-140 (U) FFOU UNMANNED AIRCRAFT - FFOU  
UNMANNED AIRCRAFT

Synopsis: (U//FOUO) FAA Notice N 8900.227 dated 7/30/2013

♦♦

UNCLASSIFIED//FOUO

CREW-3405

FD-1036 (Rev. 10-16-2009)

UNCLASSIFIED//LES



**FEDERAL BUREAU OF INVESTIGATION**  
**Import Form**

Form Type: EMAIL

Date: 10/09/2013

Title: (U//LES) FW: Final Interim Report - Department of Justice Use and Support of Unmanned Aircraft Systems

Approved By:

b6  
b7C

Drafted By:

Case ID #: 321D-IR-A7788-147 (U//FOUO) FFOU UNMANNED AERIAL SYSTEMS - FFOU UNMANNED AIRCRAFT

Synopsis: (U//LES) FW: Final Interim Report - Department of Justice Use and Support of Unmanned Aircraft Systems

Enclosure(s): Enclosed are the following items:

1. (U) Departments\_Use\_and\_Support\_for\_UAS.pdf

♦♦

UNCLASSIFIED//LES

CREW-3449

To: [REDACTED] (IR) (FBI)  
Subject: FW: Final Interim Report - Department of Justice Use and Support of  
Unmanned Aircraft Systems --- UNCLASSIFIED//LES

b6  
b7C

SentinelCaseId: 321D-IR-A7788  
SentToSentinel: 10/9/2013 3:13:54 PM

Classification: UNCLASSIFIED//LES

=====  
Sent for Approval for RECORD//Sentinel Case 321D-IR-A7788

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[REDACTED]  
Unit Chief: Field Flight Operations Unit  
Office: [REDACTED]  
Cell: [REDACTED]  
Blackberry Email: [REDACTED]

b6  
b7C

From: [REDACTED] (INSD) (FBI)  
Sent: Thursday, September 26, 2013 1:30 PM  
To: DICLEMENTE, ANTHONY P. (OTD) (FBI); LAMBERT, JANICE J (FD)(FBI); BEAN, W L SCOTT III  
(OTD) (FBI); [REDACTED] (FD) (FBI); [REDACTED] (OGC) (FBI);  
(OTD)(FBI); [REDACTED] (OTD) (FBI); [REDACTED] (OTD) (FBI);  
[REDACTED] (IR) (FBI); [REDACTED] (IR) (FBI); [REDACTED] (IR) (FBI); [REDACTED] (IR) (FBI);  
Cc: [REDACTED] (OTD) (FBI); [REDACTED] (OGC) (FBI); [REDACTED] (OGC)(FBI);  
[REDACTED] (FD)(FBI); [REDACTED] (FD) (FBI); [REDACTED] (FD) (FBI)

b6  
b7C

**Subject:** Final Interim Report - Department of Justice Use and Support of Unmanned Aircraft Systems ---  
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Classification:

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Good afternoon,

The Office of the Inspector General (OIG) has issued its Final Interim Report on the "Department of Justice's Use and Support of Unmanned Aircraft Systems." The report will be made public on today. As there are no recommendations specific to the FBI, no further action is necessary at this time.

The Inspection Division would like to extend our appreciation for your efforts throughout the OIG's interim audit. If you have any questions or concerns moving forward, please feel free to contact our office for assistance.

Regards,

[redacted]



Departments\_Use\_  
and\_Support\_fo...

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[redacted]

Management and Program Analyst/Audit Liaison  
Special Request Response Unit  
External Audit and Compliance Section  
Inspection Division

[redacted] [office]  
[redacted] [facsmile]

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Classification: UNCLASSIFIED//LES

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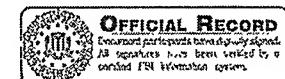
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Classification: UNCLASSIFIED//LES

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FD-1057 (Rev. 5-8-10)

UNCLASSIFIED//FOUO



## FEDERAL BUREAU OF INVESTIGATION

### Electronic Communication

Title: (U//FOUO) UAS Training and Testing

Date: 10/23/2013

From: CRIT INCIDENT RESPONSE

IR-FFOU

Contact: [redacted]

b6  
b7C

Approved By [redacted]

Drafted By: [redacted]

Case ID #: 321D-IR-A7788-148 (U//FOUO) FFOU UNMANNED AERIAL SYSTEMS -  
FFOU UNMANNED AIRCRAFT

Synopsis: (U//FOUO) To record the training and testing conducted for  
the UAS program.

Details:

On 09/11/2013, [redacted] and Program Manager SSA [redacted]  
oversaw the Training and Testing of [redacted] Unmanned Aerial Systems.  
The FBI recently had their [redacted] air vehicles upgraded to [redacted]  
[redacted] This required that all these vehicles be flight  
tested prior to any deployment. In attendance for flight testing and  
training where [redacted] and SA [redacted]  
[redacted] These [redacted] UAS operators performed at least one cycle as  
Vehicle Operator and one cycle as Mission Operator.

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b7E

The following vehicles were flight tested and found satisfactory and  
ready for deployment.

[redacted]

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Title: (U//FOUO) UAS Training and Testing  
Re: 321D-IR-A7788, 10/23/2013

[redacted]

b7E

All flights were conducted in [redacted]

[redacted]

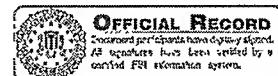
b7E

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FD-1057 (Rev. 5-8-10)

UNCLASSIFIED//FOUO



# FEDERAL BUREAU OF INVESTIGATION

## Electronic Communication

Title: (U) [REDACTED] Transferred from SSA  
[REDACTED] to SSA [REDACTED]

Date: 10/24/2013

b6  
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b7E

CC: [REDACTED]

From: CRIT INCIDENT RESPONSE  
IR-ASU  
Contact: [REDACTED]

b6  
b7C

Approved By [REDACTED]

Drafted By: [REDACTED]

Case ID #: 321D-IR-A7788 -14a (U//FOUO) FFOU UNMANNED AERIAL SYSTEMS -  
FFOU UNMANNED AIRCRAFT

Synopsis: (U) Documents transfer of [REDACTED]

b7E

Details:

On 10/24/2013, the writer transferred [REDACTED]  
[REDACTED] to SSA [REDACTED] for use in support of the  
Unmanned Aerial System Program. The device is surplus to manned  
aviation requirements. The device did not have an FBI bar code. All  
original accessories were included with the device.

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CREW-3496